GOVERNMENT OF INDIA

OUTCOME BUDGET

2016-2017

MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY
(Department of Telecommunications)

INDEX

Executive Summary

A system of performance budgeting by Ministries handling development programmes was introduced to assess the performance against the set out goals/objectives. However, it was felt that the document is not able to establish a clear one-to-one relationship between the Financial Budget and the Performance Budget and inadequate target setting in physical terms of the ensuing year. Therefore, in addition to the performance budgeting, the outcome budgeting was introduced. It was thought that there is a need to track not just the intermediate physical 'outputs' that are more readily measurable but the "outcomes" which are the end objectives. Thus, the Outcome Budget has become an integral part of the budgeting process since 2005-06.

As per the latest guidelines issued by Ministry of Finance vide letter No.10(2)/E.Cord/2015 dated 28th January, 2016. Outcome Budget 2016-17 will broadly indicate the physical dimensions of the financial budgets as also the actual physical performance in 2014-15, and the performance till December for the year2015-16 and the targeted performance during 2016-17. In pursuance to the instructions issued by Ministry of Finance, Outcome Budget 2016-17 has been prepared for the Department of Telecommunications.

Telecommunications has seen impressive expansion and large investments in the past several years with teledensity increasing from 26.2 per cent in 2008 to more than 79.36 per cent in 2015. Today, India's 1036.57 million (including 1011.05 million of wireless telephony) strong telephone network. The mass market growth in India is led by the mobile segment. This growth in the telecom network has resulted in an overall teledensity of 81.85% at the end of December 2015. There has been improvement in the rural tele-density during 2015-16 and it increased from 48.04 per cent at the beginning of the financial year to 49.82 per cent at the end of December, 2015. However, the urban tele-density increased from 149.04 per cent to 152.57 per cent during this period. This growth in the telecom sector is attributable not only to the proactive and positive policy initiatives of the Government but also to the entrepreneurial spirit of the various telecom service providers both in public and private sector.

There is tremendous scope for further expansion in telecommunications, especially with the introduction of 3G services. Telecommunications, and the associated increase in Internet connectivity is clearly a productivity enhancing development, and India is well placed to benefit from this.

The plan of telecom expansion by the Government is mainly carried out through its PSU's[1]. The Internal and Extra Budgetary Resources (IEBR) of the PSU's fund the development and expansion activities. The gross budgetary support in the Budget Estimate 2016-17 is towards the outlays of WPC[2], WMO[3], TEC[4], TRAI[5], TDSAT[6], C-DOT[7], NICF[8] and four departmental projects.

[1] Public Sector Undertakings
[2] Wireless Planning and coordination

The Universal Service Support Policy of the Government is executed through the Universal Service Obligation Fund (USOF). The resources for meeting the same are generated through a Universal Service Levy which is 5% of the Adjusted Gross Revenue (AGR) earned by all the operators except pure value added service providers like internet service provider, voice mail etc. The outlays for USOF forms part of the plan expenditure of the Department.

The Plan as well as Non-Plan expenditure is monitored on a monthly basis vis-à-vis the allocation as well as the targeted milestones of the project. Corrective actions are taken wherever required depending upon the utilization of the funds as well as the achievement of the targeted milestones. The monthly accounts of the Department are also available on the Department's website, *www.dot.gov.in*.

This document intends to highlight the specific objectives of projects/schemes, their outcomes and the development activities of the Department of Telecom and its PSUs. The document is divided into six chapters. Chapter I gives a brief introduction on the role and functions of the Department, the vision statement of the Department and its organizational set up including the PSUs under its administrative control. Chapter II is primarily in a tabular format and its main objective is to illustrate one-to-one correspondence between Financial Budget 2016-17 and the physical targets for 2016-17. Chapter III gives a snapshot view of the reform measures undertaken by the Department and various policy initiatives that have helped in fuelling the phenomenal growth in the sector with particular focus on the initiatives undertaken during past 2-3 years. Chapter IV is the review of the past performance during the year 2013-14, 2014-15 and 2015-2016 includes a bird's eye view of the status of telecom sector as a whole. Chapter V broadly examines the overall trend in expenditure vis-à-vis Budget Estimates/Revised Estimates. The position regarding utilization certificates and unspent balances has also been indicated. Chapter VI presents a review of the statutory & autonomous bodies under the Department.

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[3] Wireless Monitoring Organization
[4] Telecommunication Engineering Centre
[5] Telecom Regulatory Authority of India
[6] Telecom Dispute Settlement &Appellate Tribunal
[7] Centre for Development of Telematics
[8] National Institute of Communication Finance

CHAPTER I

I. Introduction

1.1 In pursuance of objectives of the New Telecom Policy announced in April, 1999, the Government of India by Notification No.1/22/1/99 Ca (i) dated 15.10.1999, had bifurcated the Department of Telecommunications into two Departments viz. the Department of Telecommunications for policy and licensing functions and Department of Telecom Services for all service providing functions. The Department of Telecom Services was further bifurcated vide Government of India Extra-ordinary Gazette Notification dated 19.7.2000 into two Departments, viz. the Department of Telecom Services and the Department of Telecom Operations for all matters relating to operations of telephones, wireless, data, facsimile and other forms of telecommunication. Subsequently, the Government of India has transferred the business of providing telecom services in the country from the Department of Telecom Services (DTS) and the Department of Telecom Operations (DTO) to a newly formed Company viz. Bharat Sanchar Nigam Limited, with effect from 1st October, 2000.

1.1.1 The Department of Telecommunication which forms part of the Ministry of Communications and Information Technology now remains responsible for policy formulation, licensing, wireless spectrum management, universal service obligation and the administration of various Acts pertaining to telecommunication.

1.1.2 An independent Regulator was set up by the Telecom Regulatory Authority of India Act 1997. The said Act was amended by TRAI (Amendment) Act 2000 to set up a Telecom Dispute Settlement & Appellate Tribunal (TDSAT).

Statutory Regulatory Body

i) Telecom Regulatory Authority of India [TRAI]

Statutory Tribunal

i) Telecom Disputes Settlement and Appellate Tribunal [TDSAT]

Autonomous body

i) Centre for Development of Telematics [C-DOT]

Attached/Subordinate Offices

i) Wireless Planning Coordination (WPC) & Wireless Monitoring Organization (WMO)
ii) Telecom Engineering Centre (TEC)
iii) Administrator, Universal Service Obligation Fund (USOF)
iv) Controller of Communication Account Offices (CCA)
v) Telecom Enforcement, Resources and Monitoring (TERM) cells previously known as Vigilance and Technical Monitoring (VTM) cells.

Public Sector Undertakings

i) Bharat Sanchar Nigam Limited – Govt. holding 100%
ii) Mahanagar Telephone Nigam Limited – Govt. holding 56.25%.
iii) ITI Limited – Govt. holding 92.87%
iv) Telecommunications Consultants India Limited – Govt. holding 100%
v) Bharat Broadband Network Limited – Govt. holding 100%
vi) Hemisphere Properties India Limited (**HPIL**) Govt. holding 100%

II. Role and Functions

1.2 Following are some of the functions assigned to the DoT under Government of India (Allocation of Business), Rules, 1961:

i) Policy, Licensing and Coordination matters relating to Telegraphs, Telephones, Wireless, Data, Facsimile and Telematics Services and other like forms of communications.

ii) International cooperation in matters connected with telecommunications, including matter 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).

iii) Promotion of Standardization, Research and Development in Telecommunications.

iv) Promotion of private investment in Telecommunications.

v) Procurement of stores, and equipment required by the Department of Telecommunications.

vi) Telecom Commission

vii) Telecom Regulatory Authority of India

viii) Telecom Disputes Settlement and Appellate Tribunal.

ix) 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).

x) Indian Telephone Industries Limited.

xi) Post disinvestment matters relating to M/s Hindustan Teleprinters Limited

xii) Bharat Sanchar Nigam Limited.

xiii) Mahanagar Telephone Nigam Limited.

xiv) All matters relating to Centre for Development of Telematics (C-DOT)

xv) 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' services and other categories of personnel till their absorption in Bharat Sanchar Nigam Limited;

b) Administration and Payment of terminal benefits.

xvi) Execution of works, purchase and acquisition of land debitable to the capital Budget pertaining to telecommunications.

III. Vision Statement of the Department

1.3 To develop a strong and vibrant technology neutral telecom sector with enhanced participation of private sector that can:

- Propel India into the forefront among the global economic superpowers with high quality and cost-effective telecom infrastructure and services support.
- Ensure that the India's rural masses have easy access to the info-highways leading to education, knowledge, commerce and health, thereby bridging the digital divide.
- Provide opportunities for private investment both in services sector and manufacturing sectors leading to creation of employment, particularly in rural areas.
- Keep India technically advanced; initiate R&D in cutting-edge telecommunication technologies.

IV. Organizational set up

1.4 Department of Telecommunications

With a view to promoting quick decision making and development in all aspects of telecommunications including technology, production services and financing etc., the Government of India established a Telecom Commission with necessary executive, administrative and financial powers to deal with various aspects of telecommunications, modelled on the lines of Atomic Energy Commission/Space Commission. Telecom Commission, which consists of a Chairman and four full time and four part-time Members, functions under the Ministry of Communications and Information Technology. Till 30.9.2000, the Commission directly oversaw the operations and the developmental activities of the Department of Telecom Services. After the formation of BSNL, it remains responsible for policy matters, licensing, spectrum management and co-ordination.

1.4.1 Wireless Planning and Co-ordination (WPC) Wing

1.4.1.1 Introduction

The WPC wing in the Department of Telecommunications deals with the policy of spectrum management, wireless licensing, frequency assignments, international coordination for spectrum management and administration of Indian Telegraph Act, 1885, for radio communication systems and Indian Wireless Act, 1933 (IWTA)

1.4.1.2 Functions

The Wireless Planning and Co-ordination (WPC) Wing of the Ministry of Communications & IT is responsible for:

i) Radio Frequency (RF) Spectrum Management for terrestrial and satellite operations and Orbit-Frequency coordination in respect of Satellite Systems keeping in view ITU's Radio Regulations.

ii) Assignment of radio frequencies for various radio services in India and all the related actions for national and international coordination.

iii) Licensing of all wireless stations of various categories.

iv) Coordination in all matters as national nodal agency, relating to International Telecommunication Union (ITU) including preparations for participation in their meetings and conferences after coordinating and harmonizing the views at national level with various wireless users from Govt. Departments/Organization and others.

v) Conduct of examinations for award of Certificate of Proficiency (COP) for Radio Officers/Pilots/Wireless Operators on board ships and aircrafts and for award of Amateur Stations Operators Certificates (ASOC).

vi) Site clearance of wireless installations and effecting inter-departmental coordination through the apex body namely the Standing Advisory Committee on Radio Frequency Allocations (SACFA).

vii) Direction and Control of Wireless Monitoring Organization, the field organization.

V. Attached/Field Offices of DoT

1.4.2 Controller of Communication Accounts

The Offices of Controller of Communication Accounts (CCA) came into existence on 1.10.2000, following the Corporatization of the erstwhile operational arms of the DoT. These were created with a view to ensure smooth and efficient performance of major functions of the Department of Telecom at the field level. They have played a crucial role in ensuring smooth management of retirement and other terminal benefits to lakhs of employees of DoT, BSNL and MTNL.

1.4.2.1 Functions being performed by CCA Offices

The 25 CCA offices spread across the length and breadth of the country are performing following important functions:

i. **Disbursement of Pension:** CCA offices are responsible for the settlement of pensionary and terminal benefits i.e. issue of pension payment orders, authorization of payment of commuted value of pension, gratuities, recovery of pension contribution, etc.

ii. **GPF, Loans and Advances:** The CCAs are responsible for maintenance of GPF accounts and recovery/ accounting of long term advances taken by employees.

iii. **License Fee collection:** DoT has issued various types of licences. Majority of the licences are under revenue share regime of licence fee which is based on fixed percentage of Gross Revenue / Adjusted Gross Revenue, while some are under fixed rental licence fee based on terminals. Office of the CCAs is authorized to collect the licence fee of all kind of licences. The preliminary scrutiny of licence fee related documents as per licence agreement is also performed by them. Assessment of Licence Fee in respect of Standalone Licences has also been decentralized to the circles. Licencees having multiple licences, the assessment is being done at DoT, HQ. DoT HQ is also dealing with the issues raised by the field offices in respect of licence fee collection.

iv **Maintenance of Financial Bank Guarantees**: The CCAs have been entrusted with the work of maintenance, renewal, revision and invocation of Financial Bank Guarantees submitted by the licencees in respect of all licenses.

iv. **Verification of Deductions**: As per the license agreement, licensees claim deductions from Gross Revenue to arrive at Adjusted Gross Revenue for the purpose of calculation of Licence Fee Payment. The CCAs are verifying the deductions on a quarterly basis (on account of pass through charges, roaming service charges, sales tax , service tax) claimed by the licensees . The deductions claimed vary from 23% to 91% of the Gross Revenue under different categories of licenses.

v. **Spectrum Charges:** The CCAs are responsible for collection and monitoring of Spectrum Revenue from Telecom service providers in respect of the licensees relating to GSM/CDMA/UASL etc.

vi. **Universal Service Obligation:** The CCA offices are responsible for the verification of USO subsidy claims of the eligible service providers and release of payments. They are also responsible for physical inspection of facilities and monitoring the progress of Rural Telephony which has a direct bearing on subsidy disbursed.

vii. **Legal Matters:** The CCAs also handle court cases at field level where the Government of India is a party in matters of licence fees, spectrum fees, pension, absorption issues and other legal issues in which the Department of Telecom, Government of India is made a respondent etc.

viii. **Pension Adalats:** The CCAs also hold Pension Adalats and liaison with State Departments and other ministries on various issues.

1.4.3 Telecom Enforcement, Resource and Monitoring Cells (TERM Cells):

1.4.3.1 With the increasing number of telephone operators in the country the Government felt the need of presence of Telegraph Authority in the circles. The TERM cells are functioning as the field offices of the DoT. These cells perform the vigilance and monitoring functions.

1.4.3.2 Vigilance Functions:

i. To Carry out inspection of premises of service providers(illegal) in order to curb illegal / clandestine activities
ii. Inspection of premises of the licensed service provider
iii. Control over clandestine / illegal operation of telecom networks by vested interest having no license
iv. To file FIR against the culprits, pursue the cases; issue notices indicating violation of conditions of various Acts in force from time to time.
v. Analysis of call/subscription/traffic data of various licensees.
vi. Technical arrangement for the lawful interception / monitoring of all communications passing through the licensee's network.
vii. To ascertain that the licensee is providing the services within permitted area.

1.4.3.3 Monitoring Functions:

i. Coordination and monitoring of various network operators.
ii. To check the compliance to the roll-out obligation as per license condition
iii. Checking of the compliance by the licensee in respect of the license conditions and any directions issued by the licensor in public interest.
iv. To ensure optimum call completion ratio of inter operator calls.
v. Matters related to national security.
vi. Disaster Management: Taking over of network in the events of natural calamities or the other emergency situations.
vii. Grievance redressal of subscribers in respect of deficiency by various operators.
viii. Perform such other functions as may be entrusted to it from time to time by the DOT in overall interest of the country and consumers

1.4.4 Telecommunication Engineering Centre (TEC)

1.4.4.1 Telecommunications Engineering Centre (TEC), is a Technical wing of the Department of Telecommunications (DoT), Ministry of Communications and Information Technology, Government of India. In addition to providing technical support to DoT, TEC also publishes documents detailing the technical requirement for all telecom equipments to be used in various telecom networks in India. It also tests and certifies telecom product and networks for conformance to the aforesaid requirements as well as for interoperability. Its major activities and responsibilities are:

- Formulation of technical requirements, viz., Generic, Interface, and Service Requirements, for all telecom equipments, interfaces, and services to ensure seamless interworking of different networks of various telecom service providers in India.
- Formulation of Fundamental National Telecom Plans, viz., Numbering Plan, Spectrum Management Plan, Transmission Plan, Switching Plan, Synchronization Plan, and provide technical support to service providers in implementing them.
- Formulation of standards to limit harmful electromagnetic interference to ensure proper functioning of equipment, as well as to ensure safety for human beings.
- Formulation of norms to ensure optimal utilization of scarce resources, like radio spectrum
- Testing and certification of equipment, interfaces, and networks for conformance and interoperability
- Testing and certification of equipment, to promote indigenization and manufacturing take-off in India by active co-operation with C-DOT, to develop telecom technologies aimed specifically for rural areas.

- Monitoring of the network for compliance to the laid-down norms and standards
- Interaction with other forums, stakeholders and associations, and international telecommunication standards organizations, for standardization and for protecting the interests of India
- Functioning as Designating Authority (DA) for India, for designation of domestic and recognition of foreign Conformance Assessment Bodies (CAB) and Certification Bodies (CB) for testing and certification of telecom products for the use in the countries having Mutual Recognition Agreement (MRA).

1.4.4.2 TEC has the following technical Core Divisions which handle various activities in standardization of technical requirements of telecom products and networks related to the technology streams

- Fixed Line Access
- Information Technology
- Mobile Communication
- Network Terminals with Customer Premise Equipment
- Radio
- Services and Applications
- Spectrum
- Switching
- Transmission

In addition, Technical Divisions handle various other activities.

- Conformity Assessment Bodies (CAB) and Training
- Next Generation Network (NGN) Test-bed
- Next Generation Network (NGN) Coordination
- Testing and Certification (T&C) with the help of following Regional Centres

    (i) Regional TEC, Delhi for Northern Zone
    (ii) Regional TEC, Kolkata for Eastern Zone
    (iii) Regional TEC, Mumbai for Western Zone
    (iv) Regional TEC, Bangalore for Southern Zone

1.4.4.3 TEC publishes a number of technical documents. To ensure compliance to Conformance, Interoperability, EMI/EMC, Security, Safety, Health issues in telecom equipment, the following documents are published.

- Generic Requirements (GR)
- Interface Requirement (IR)
- Service Requirement (SR)
- Standards Document (SD)

1.4.5 Wireless Monitoring Organization (WMO)

The Wireless Monitoring Organization (WMO) is field organization of the WPC Wing of the DoT, Ministry of Communications & IT.

The WMO has a network of 22 Monitoring Stations spread all over the country to monitor (technical and operational parameters of) all wireless transmissions, both Government and Non-government agencies. These stations resolve cases of harmful interference as well as collect data on vacancy/occupancy of Radio Frequency Spectrum, identify and to locate unauthorized wireless transmissions. To ensure mutual compatibility and efficient working of various services like microwave, LOS links, Radar, Cellular Radio Telephones etc., Mobile monitoring is also carried out.

An International Satellite Monitoring Earth Station is functioning at Jalna (Maharashtra) with its primary objective to protect Indian Satellite Systems from the interference caused by the transmissions of the foreign satellite systems by monitoring/checking of various technical parameters.

1.4.6. Administrator, Universal Service Obligation Fund (USOF)

The Universal Service Obligation Fund(USOF) aims to provide telecommunication services to people residing in rural and remote areas of the country at affordable price. The Universal Service Support Policy (USSP) announced by the Government based on therecommendations of TRAI came into effect from 1.04.2002.For implementation of the Universal Service Support Policy, the Government has appointed an Administrator, Universal Service Fund w.e.f. 1.6.2002. The office of the Administrator, USF is an attached office of the DoT.
The main functions of the Administrator, USOF are as follows:

- Formulate bidding procedures including its terms and conditions for the purpose of implementation of Universal Service Obligation.
- Evaluate the bids called for the purpose of implementation of Universal Service Obligation.
- Enter into Agreement with the Universal Service Provider for the purposes of implementation of Universal Service Obligation.

- Settle the claims of Universal Service Provider after due verification, and make disbursements accordingly from the Fund.
- Specify relevant formats, procedures and records to be maintained and furnished by the Universal Service Provider.
- Monitor the performance of the Universal Service Provider as per the procedure specified by him from time to time.

As envisaged in NTP-99, the resources for the implementation of the USSP are being raised through a Universal Service Levy (USL) which has been fixed at 5% of the Adjusted Gross Revenue (AGR) earned by all the operators as part of the license fee, except for pure value added service providers such as Internet, voice mail, e-mail etc.

VI. Regulatory Authority/Appellate Tribunal

1.4.7 Telecom Regulatory Authority of India (TRAI)

The Telecom Regulatory Authority of India (TRAI) was established under the Telecom Regulatory Authority of India Act, 1997 enacted on 28th March 1997. The TRAI (Amendment) Act, 2000 led to reconstitution of the Authority. It consists of one Chairperson, two full- time members and two part-time members. TRAI has endeavoured to encourage greater competition in telecom sector together with better quality and affordable prices, in order to meet the objectives of NTP'99. Vide Notification of the Government dated 9th January 2004, broadcasting and cable services have also been included in the definition of 'telecommunication service' under the TRAI Act, and thus, broadcasting and cable services have also come under the purview of TRAI.

1.4.7.1 Functions of TRAI

1.4.7.1.1 Under Section 11(1) (a) of the TRAI Act, the TRAI is to make recommendations either Suo Moto or on a request from the Licensor on the following matters:

i. Need and timing for introduction of new service providers;
ii. Terms and conditions of licence to service providers;
iii. Revocation of licence for non-compliance of the terms and conditions of licence;
iv. Measures to facilitate competition and promote efficiency in the operation of telecommunication services;
v. Technological improvements in the services provided by the service providers;
vi. Type of equipment to be used by the service providers after inspection of the equipment used in the network;
vii. Measures for the developments of telecommunication technology;
viii. Efficient management of the available spectrum.

1.4.7.1.2 Under Section 11(1) (b) of the TRAI Act, TRAI's regulatory functions are:

i. Ensure compliance of the terms and conditions of licence,
ii. Fix the terms and conditions of inter-connectivity between the service providers,
iii. Ensure technical compatibility and effective interconnection between different service providers,
iv. Regulate arrangement amongst service providers of sharing their revenue derived from providing telecommunications services,
v. Lay down the standards of quality of service to be provided by the service providers and ensure the quality of service and conduct periodical survey of such service provided by the service providers so as to protect the interest of the consumers,
vi. Lay down and ensure the time period for providing local and long distance circuits of telecommunication between different service providers.
vii. Maintain register of interconnection agreements and all such other matters as may be provided in the regulations,
viii. Ensure effective compliance of universal service obligations.

1.4.7.1.3 Under Section 11(1) (c) & (d) of the TRAI Act, TRAI's other functions are:

i. Levy fee and other charges at such rates and in respect of such services as may be determined by regulations,
ii. Perform such other functions including administrative and financial functions as may be entrusted to it by the Central Government or as may be necessary to carry out the provisions of the TRAI Act,

As per Section 11(2) of the TRAI Act, the function of the Authority is to notify from time to time in the Official Gazette the rates at which the telecommunication services within India and outside India shall be provided under the TRAI Act including the rates at which messages shall be transmitted to any country outside India.

In addition to the above, in exercise of the powers conferred by clause (d) of sub-section (1) of section 11 of the TRAI Act, the Central Government has entrusted additional functions to TRAI in respect of broadcasting and cable services which mandates TRAI to make recommendations regarding the terms and conditions on which the "Addressable systems" shall be provided to the customers.

1.4.8 Telecom Disputes Settlement & Appellate Tribunal (TDSAT)

Telecom Disputes Settlement & Appellate Tribunal (TDSAT) was established in the year 2000 by Government of India after amending the Telecom Regulatory Authority of India Act, 1997. The Tribunal consists of a Chairperson, and two members. The TDSAT adjudicates disputes between licensor and licensee, between two or more service providers, between a service provider and a group of consumers and hear and dispose of appeals against any decision or order of the Telecom Regulatory Authority of India. The Tribunal has original as well as appellate

jurisdiction. As per Section 16 (1) of the Act, the Appellate Tribunal is not bound by the procedure laid down by the Code of Civil Procedure but is guided by the Principals of Natural Justice and subject to the other provisions of the Act, the Appellate Tribunal has powers to regulate its own procedure.

In exercise of the powers conferred by the proviso to clause (k) of sub-section (1) of Section 2 of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997), the Central Government by Notification No. 44(E) dated 9.1.2004 notified the "broadcasting services" and "cable services" to be "telecommunication service".

TDSAT has also developed its own Website and all the important judgments and other activities of this Tribunal are available on the Website www.tdsat.nic.in.

VII. Autonomous Body

1.4.9 Centre for Development of Telematics (C-DOT)

The Centre for Development of Telematics (C-DOT) was set up by the Government of India on August 25, 1984 as an autonomous scientific society under the Societies Registration Act, 1860, with its registered office in New Delhi. Its activities focus on research and development in the areas of Telematics technology, products and services. The organization is funded mainly by way of grants-in-aid from the Government.

1.4.9.1 Key Objectives

i. Development of total telecom solutions, technologies and application for the fixed line, mobile and packet based converged network & services with particular emphasis on rural and remote areas.
ii. Development of local manufacturing capabilities for C-DOT products by using indigenous ancillary industries for components.
iii. Research in the frontiers of Information Technology and Telematics, taking into account the futuristic trends.
iv. Research and development in the telecom security arena of telecom equipment as well as services.

VIII. Public Sector Undertakings

1.4.10 Bharat Sanchar Nigam Limited (BSNL)

1.4.10.1 In pursuance of Telecom Policy 1999, the Govt. of India corporatized the service providing functions of Department of Telecommunications (DOT) and transferred and business of providing telecom services in the country to the newly formed company viz Bharat Sanchar Nigam Ltd w.e.f. 1st Oct 2000. The Company has been incorporated as a company with limited liability by shares under the Companies Act 1956, with its registered and corporate office in New Delhi.

1.4.10.2 BSNL is a Public Sector Undertaking with an authorized share capital of Rs.17,500 crore and paid up capital of Rs.12,500 crore comprising of Rs. 5,000 crores of Equity and Rs. 7,500 crores of 9% preference shares It is a technology-oriented company with a mandate of providing all types of telecom services

1.4.10.3 BSNL has largest telecom network in the country. It operates the telecom services in all the circles of the country except Delhi and Mumbai where another Public Sector Undertaking viz MTNL is operating.

1.4.10.4 The objective of BSNL is to provide world-class telecom services ranging from plain telephone service to all types of value added services at affordable prices

1.4.11 Mahanagar Telephone Nigam Limited (MTNL)

1.4.11.1 Mahanagar Telephone Nigam Limited (MTNL) was incorporated on Feb.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 Networks in Delhi & Mumbai. MTNL is the principal provider of fixed-line telecommunication service in these two Metropolitan Cities of Delhi and Mumbai and the jurisdiction of Company comprises the city of Delhi and the areas falling under the Mumbai Municipal Corporation, New Mumbai Municipal Corporation and Thane Municipal Corporation.

1.4.11.2 The vision of MTNL is to be a leading integrated player in telecom, diversifying into related businesses in order to expand significantly, keeping customer delight as the aim. The key objectives of the company are:

- To expand the existing customer base and services
- To provide services to the customers based on the latest technology
- To achieve the highest levels of customers' satisfaction.
- To support R&D projects

- To improve productivity by training and redeployment of man power
- To provide better corporate governance.

1.4.11.3. MTNL under a license issued on February 2001 is also providing GSM based cellular services in both the metropolitan cities of Delhi (including the cities of Gurgaon, Faridabad, Ghaziabad and Noida) and Mumbai (including Kalyan as well).

1.4.11.4 A Joint Venture Company named United Telecom Ltd. (UTL) has been set up by MTNL, VSNL and TCIL along with Nepal Venture Pvt. Ltd. (NVPL) to provide CDMA based basic services in Nepal. UTL also has licence to operate NLD & ILD services.

1.4.11.5 In the international arena, a wholly owned subsidiary under the name of Mahanagar Telephone Mauritius Ltd. (MTML) has been providing services in Mauritius. It has already rolled out CDMA based fixed and mobile services as well as internet & ILD services.

1.4.11.6 MTNL has also formed a Joint Venture with Software Technology Parks of India (STPI) under Department of Information Technology, Ministry of Communication and Information Technology, New Delhi, with authorized capital of ` 50 crores.

1.4.11.7 Millennium Telecom Limited (MTL), a joint venture company of MTNL & BSNL, is planning to lay its own submarine cable system from both east & west of the country to far South-East Asia & Middle East with an ultimate aim for onward connectivity to Europe and North America.

1.4.11.8 MTNL launched Broadband service based on the state of the art ADSL2+ technology.

1.4.12 ITI Limited

1.4.12.1 ITI Limited was established in July 1948 as a Departmental Undertaking of the Government of India and was converted into a Company in January 1950. It is the first Public Sector Undertaking to be set up by the Government of India. The Authorized and Paid up Share Capital of the Company is ` 700 Crores and ` 588 Crore respectively as on 31-03-2005. The Registered and Corporate Office of the Company is situated at Bangalore. The Company has grown into country's largest telecom company with state-of-the-art manufacturing facilities spread across six manufacturing units located at Bangalore, Naini, Rae Bareli, Srinagar, Palakkad and Mankapur. In addition Network Systems unit with headquarters at Bangalore provides value-added services like Radio Paging, VSAT, etc. and there are 10 Regional Offices. It offers a complete range of telecom products covering the whole spectrum of Switching, Transmission, and Access and Subscriber Premises equipment. In tune with the technology trend, it has embarked on the manufacture of GSM and CDMA infrastructure equipment.

1.4.12.2 The strength of ITI lies in the strategic area of communications for Defence and the same has been epitomized by the prestigious ASCON project. By deploying its vast telecom expertise and infrastructure, the Company is consolidating its diversification into IT and IT–enabled services, acquiring keen competitive edge in the convergence market.

1.4.12.3 Major Customers of ITI products are BSNL and MTNL. ITI is also supplying Telecom Products to Railways, Defence and Corporate Sectors. ITI is also making all out efforts to become a key player in the global market and continue its exports efforts in Afghanistan, Africa and SAARC countries.

1.4.13 Telecommunications Consultants India Limited (TCIL)

1.4.13.1 On 10th March 1978, Telecommunications Consultants India Ltd. (TCIL) was incorporated as a wholly owned Government of India Company. The Company was set up with the objective of extending the wide ranging telecom expertise available with DoT to friendly developing countries. On August 1st, 1978, the Company commenced its business. The Company has since then been engaged in adopting world class communication and IT technologies for catering to the local needs of countries mainly in the developing world. The Company is establishing itself in the changed Telecom & IT Scenario and has diversified into Information & Technology and Civil construction sector

1.4.13.2 The vision of TCIL is "To excel in providing solutions in ICT, Power and Civil Infrastructure Sectors globally by anticipating opportunity in technology".

1.4.13.3 TCIL works towards the following objectives:

- To provide world-class technology and Indian expertise globally in all fields of telecommunications and information technology
- To sustain, expand and excel in its operations in Overseas/Indian Markets by developing proper marketing strategies.
- To acquire State-of-the-Art technology on a continuous basis and maintain leadership.
- To diversify into Cyber Parks, Cyber Cities, Intelligent Buildings, Highways and Roads and other Civil Works.
- Entering areas of cost-effective network technologies for building new Telecom & IT networks and upgrading legacy networks.
- Focusing on Broadband Multimedia Convergent Service Networks.
- Entering into new areas of IT as system integrator in Telecom billing, Customer Care, Value added services, e-Governance networks and the like.
- Aggressively promoting O & M contracts abroad in the IT and Telecom fields by utilizing TCIL's expert technical manpower.

- Developing Telecom & IT training infrastructure in countries abroad.
- Aggressively participating in SWAN Projects in various states.

1.4.13.4 Core Competence

1.4.13.4.1 Company is undertaking projects in all the fields of Telecommunications and IT in India and abroad. The core competence of the Company is in Network projects, Software Support, Switching and Transmission Systems, Cellular Services, Rural Telecommunications, Optical Fibre based backbone network, and CDMA based basic service networks, Billing, Mediation and Customer Care systems for different Telecom services. The company is also diversifying into other business areas such as Optical Fibre on ground wire for power utilities, e-governance for State Governments in India and abroad, communication system for Airport Terminals & Light Houses, construction of intelligent buildings, cyber parks, roads etc.

1.4.13.4.2 Company has also entered into Basic and other licensed Services in India/ abroad through the JV route. TCIL already has operations of cellular services through a JV in Rajasthan. and operation of WLL (Wireless in Local Loop) system based basic services in Nepal, through a JV with MTNL, VSNL and a Nepalese partner. The company is currently working on contracts secured in Sudan, Saudi Arabia, Mauritius, Kuwait, Oman, Ethiopia and UAE etc. TCIL is also working on Pan-Africa e-Medicine and e-Education for 53 African countries.

1.4.14 Bharat Broadband Network Limited

1.4.14.1 Bharat Broadband Network Limited has been incorporated on 25-02-2012 as a Special Purpose Vehicle (SPV) for the execution of National Optical Fibre Network (NOFN) project. The NOFN has been planned to connect all the 2,50,000 Gram Panchayats in the country through optical fibre cable utilizing the existing fibres of PSUs such as BSNL, RailTel and Power Grid and laying incremental fibre wherever necessary.

CHAPTER – II

Outcome Budget 2016-17

The Outcome Budget 2016-17 has been prepared for the schemes/programmes coming under Plan. The Outcome Budget 2016-17 prepared for the Department of Telecommunication includes the following:

Annual Plan Proposal 2016-17 (BE)

(Rs. In Crore)

Sl. No.	Unit/Scheme	BE 2016-17 (Allotted)
1	BSNL	7317.00
2	MTNL	649.03
3	ITI Ltd.	-(671.00)
4	BBNL	9418.67
5	TCIL	1.00
6	HPIL	1.00
7	C-DoT	100.00
Total IEBR		**16815.70**
GBS		
1	ITI	80.00
2	WMO	15.00
3	WPC	0.70
4	TRAI	16.00
5	TDSAT	1.10
6	TEC	10.00
7	C-DoT	220.00
8	TDIP	2.20
9	DS/OFC	2710.00
10	NICF (Phy. Infra. & HRM)	27.00
11	USOF	2755.00
12	Microwave link between Champhai to Zokhawthar	1.00
13	Establishment of Satellite Gateway Assistance to BSNL	9.00

14	North East Projects executed by BSNL with Government Support	3.00
15	Construction of New Building for DoT*	15.00
Total GBS		**5865.00**
Total Plan Outlay		**22680.70**

UNIVERSAL SERVICE OBLIGATION FUND

Para 2.1. Rural Telephony

Telecom development in rural areas assumes special significance as more than 70% of India's population lives in villages. There is a strong two-way co-relation between telecom development and overall economic development of a region. Telecom services are important drivers for development, delivery of public services such as education, health etc. and integration of rural areas with the rest of the country. Recognizing this, Government had announced the Universal Service Support Policy on 27th March 2002 under which a separate fund for providing access to telegraph services to people in the rural and remote areas was set up. The resources for implementation of USO are raised through a Universal Service Levy (USL) which has presently been fixed at 5% of the Adjusted Gross Revenue (AGR) of all telecom service providers except the pure value added service providers like, Voice Mail, email service providers etc. The activities being undertaken by Department of Telecom under USO are geared towards augmenting the infrastructure and increasing telecom coverage in the rural and remote areas.

Initially the thrust of the activities under taken by USO Fund was on providing public access to rural and remote areas which included operation & maintenance expenses towards Village Public Telephones (VPTs), support for provision of new VPTs in uncovered villages and for Rural Community Phones (RCPs). Subsequently the individual telephones (RDELs) were also provided subsidy support from USO Fund. To broaden the scope of USOF and to include mobile services, broadband, general infrastructure and pilot projects for induction of new technological developments in its ambit, Indian Telegraph Rules were amended on 17-11-2006 to enable support for providing various telecom services in the rural and remote areas of the country. With the amendment to Indian Telegraph Rules & Act in 2006, USOF has been enabled to launch a number of new schemes for rural telecommunications.

PLANNED / NEW / FORTHCOMING SCHEME

2.1.1 Mobile services in Uncovered villages.

A scheme to extend financial support from USO Fund for provisioning of mobile communication services in inhabited uncovered villages of the country not having mobile coverage is under consideration. The Telecom Commission accorded 'in-principle' approval for the scheme in its meeting held on 13.06.2014 and directed that Detailed Project Report (DPR) be prepared for the same.

An exercise was undertaken by DoT to identify uncovered villages as per Census 2011 which do not have mobile connectivity in the country. Tower location data and village coverage data was obtained from all service providers and gaps in connectivity

A State-wise list of Uncovered Villages is as below: have been identified with the assistance of M/s TCIL. It is estimated that there are about 55,669 villages in the country that do not have mobile coverage.

Sr.No.	Name of the State/UT	Total number of inhabited villages	No. of Uncovered Villages
1.	Andhra Pradesh	16335	3812
2.	Arunachal Pradesh	5258	2886
3.	Assam	25372	2885
4.	Bihar	39073	2534
5.	Chhattisgarh	19567	4041
6.	Goa	320	65
7.	Gujarat	17843	1275
8.	Haryana	6642	2
9.	Himachal Pradesh	17882	2416
10.	Jammu & Kashmir	6337	460
11.	Jharkhand	29492	5949
12.	Karnataka	27397	0

13.	Kerala	1017	0
14.	Madhya Pradesh	51929	5926
15.	Maharashtra	40959	4792
16.	Manipur	2515	610
17.	Meghalaya	6459	2389
18.	Mizoram	704	258
19.	Nagaland	1400	137
20.	Odisha	47675	10398
21.	Punjab	12168	91
22.	Rajasthan	43264	770
23.	Sikkim	425	23
24.	Tamil Nadu	15049	113
25.	Telangana	10347	1009
26.	Tripura	863	2
27.	Uttar Pradesh	97814	266
28.	Uttarakhand	15745	1876
29.	West Bengal	37469	487
30.	Andaman & Nicobar	684	190
31.	Puducherry		0
32.	Dadra & Nagar Haveli		5
33.	Daman & Diu		1
34.	Lakshadweep		1
	TOTAL	**597608**	**55669**

[Source : DoT]

Mobile coverage to balance uncovered villages is likely to be provided in a phased manner over a period of five years.

Following schemes under USOF are currently under various stages as detailed below:

(a) **Provisioning of mobile Services for LWE affected States**:

In the first phase, the work of mobile coverage in LWE affected States has been entrusted to BSNL. Under this scheme 2199 towers as identified by MHA has been planned to be installed for mobile coverage to the LWE affected areas. As on 31.12.2015, out of the 2199 towers, 1288 towers have started radiating and mobile services have been provided to the corresponding areas. Balance towers are expected to be completed by June 2016. In the second phase, DPR shall be prepared for the balance villages, for which the case is to be processed separately.

(b) **Providing mobile coverage to the uncovered villages in the North Eastern Region (NER)**:

Mobile coverage to the uncovered villages in the NERhas been taken up initially as part of Comprehensive Telecom Development Plan for NER. Detailed Project Reports (DPR) has been prepared by M/s TCIL and the Tender document for selection of Telecom Service Provider is under finalization.

(c) **Provision of Mobile Services in Himalayan and Western Border States** :

Providing mobile coverage to balance uncovered villages isplanned in a phased manner over five years. Work for preparation of Detailed Project Reports (DPR) in respect of 4752 uncovered villages in Himalayan States (Jammu & Kashmir, Himachal Pradesh and Uttarakhand) and 2138 villages in respect of Western Border States (Rajasthan, Gujarat, Punjab and Haryana) has been entrusted to M/s Telecom Consultations India Limited (TCIL).

Himalayan States:

Sr.No.	Name of the State	Total number of inhabited villages	No. of Uncovered Villages
1	Himachal Pradesh	17882	2416
2	Jammu & Kashmir	6337	460
3	Uttarakhand	15745	1876
	TOTAL	**39964**	**4752**

Western Border States:

Sr.No.	Name of the State	Total number of inhabited villages	No. of Uncovered Villages
1	Gujarat	17843	1275
2	Haryana	6642	2
3	Punjab	12168	91
4	Rajasthan	43264	770
	TOTAL	**79917**	**2138**

Draft DPR for the Himalayan States has been received and examined in USOF. The observations on draft DPR has been communicated to TCIL on 28.12.2015 for addressing and finalisation of the DPR. In respect of the Western Border States, DPR is yet to be received.

(d) Provision of Mobile services in states with fewer unconnected villages:

Work for preparation of Detailed Project Reports (DPR) in respect of 937 villages, uncovered villages in Goa, Tamil Nadu, Uttar Pradesh, West Bengal, Daman, Dadar& Nagar Haveli has also been entrusted to M/s Telecom Consultations India Limited (TCIL). The draft DPR for the state of Goa and UTs of Daman, Diu and Dadar and Nagar Haveli has been received and is being examined.

S.No.	**State/UTs**	**No. of Uncovered Villages**
1	Goa	65
2	Tamil Nadu	113
3	Uttar Pradesh	266
4	West Bengal	487
5	Daman, Diu, Dadar & Nagar Haveli	6
	Total	**937**

2.1.2 Improving Telecom Services in Andaman & Nicobar Islands and Lakshadweep Islands under "Comprehensive Telecom Development Plan for Islands"

The status of various components of the Comprehensive Telecom Development Plan for Islands is as follows:

a) Submarine OFC Connectivity between Mainland India (Chennai) and Andaman & Nicobar Islands (Port Blair):

- As per decision taken in Planning Commission (Now NITI Aayog) on 02.05.2014, direct communication link through a dedicated submarine OFC from Mainland India [Chennai Cable Landing Station (CLS)] to Andaman & Nicobar Islands [Port Blair CLS] has been planned.

- Project to be implemented in two phases:

  - ❖ Phase-I: Provision of submarine OFC from Chennai to Port Blair and to three other islands Car Nicobar, Little Andaman and Havelock

  - ❖ Phase-II: Provision of submarine OFC to Kamorta and Great Nicobar Islands (to be taken up on completion of the first phase)

- Capital investment (CAPEX) for the submarine OFC to be met from USO Fund
- Annual operational expenditure (OPEX) in the form of viability gap funding is to be provided by U.T. Administration/ MHA
- TCIL asked by DoT vide letter dated 06.05.2014 to prepare DPR based on desk top survey as per decision taken in Planning Commission

- Work Order awarded to TCIL on 10.02.2015 for preparation of DPR based on DTS.
- Final DPR submitted by TCIL on 18.05.2015 and Stakeholders meeting held on 23.06.2015
- Addendum to DPR submitted by TCIL on 21.08.2015 taking into consideration the comments received from the stakeholders
- MHA has agreed for funding of OPEX for submarine OFC system in accordance with the Planning Commission decision
- Approval for the proposal/ TC Note based on the DPR to be sought by March 2016
- Work to be awarded by December 2016 after completing the Tendering process

Project Cost:

- **CAPEX: Rs. 704 Cr.**
- **OPEX: Rs. 35.5 Cr. per annum**

b) <u>Satellite Bandwidth Augmentation in A&N Islands:</u>

- Decision taken in meeting held in Cabinet Secretariat on 12.06.2014 for funding of CAPEX by USOF for enhancement of satellite bandwidth from 260 Mbps to 1 Gbps

- Funding of OPEX/ transponder charges by A&N UT Administration through MHA

- Work awarded to BSNL on nomination basis as per decision taken in TC meeting held on 07.11.2014

- Technical requirements & detailed cost estimates vetted by a technical group under Member (Technology) on 31.03.2015 on the basis of DPR submitted by BSNL

- Telecom Commission in its meeting held on 22.04.2015 approved the DPRs vetted by Technical Group under Member (T) and 10% advanced payment to BSNL against total CAPEX of Rs. 80.98 Crore.

- As on 31.12.2015, bandwidth augmented to 600 Mbps by BSNL as against the target of 1 Gbps mentioned in TC approved dated 22.04.2015.

- MoU signed with BSNL on 29.12.2015

- Bandwidth augmentation upto 1 Gbps to be implemented in a phased manner by 31.03.2016 owing to delay in supply of equipment by the vendor

c) Provision of 2G (voice) mobile coverage in uncovered villages and along uncovered portions of NH223 for A&N Islands:

- 2G Mobile Connectivity by installing 109 BTSs to cover 109 uncovered villages and additional 72 uncovered villages directly/ incidental coverage with these 109 BTSs **at an Estimated Investment of Rs. 83.09 Crore (as per decision taken by TC in the meeting held on 07.11.2014 on TRAI recommendations).**

- 2G Mobile connectivity to cover the entire 129 km of uncovered National Highway 223 subject to specific permission of the UT Administration along 80 km of the National Highway falling within Jarawa Tribal Reserve Belt **at an Estimated Investment of Rs. 9.40 Crore (as per decision taken by TC in the meeting held on 07.11.2014 on TRAI recommendations).**

- Work to be awarded through competitive bidding basis according to the normal mode of funding by USOF

- Work awarded to TCIL on 10.02.15 for preparation of DPR

- DPR submitted by TCIL on 22.05.2015

- Stakeholders Meeting held on 02.06.2015

- Revised DPR received from TCIL taking into consideration the recommendations of the Committee on Stakeholders comments on 09.10.2015

- Shortcomings in DPR pointed out to TCIL vide e-mail dated 14.10.2015, 16.11.2015, 19.11.2015 & 23.11.2015. Revised DPR submitted by TCIL on 27.11.2015.

- Based on decisions taken in the meeting held in January 2016, TCIL has submitted Revised DPRs on 15.01.2016 and the same is under examination

- Telecom Commission Approval to be sought on the basis of Final DPR received from TCIL

- As per the recent timelines given to NITI Aayog and PMO

  - ❖ Tender to be floated (Project initiation) by March 2016
  - ❖ Project to be implemented by March 2017

- Work likely to be awarded by September 2016 after completing the Tendering process

d) Augmentation of Intra Island OFC network for A&N Islands:

- Augmentation of bandwidth by enhancing the capacity of the network and providing OFC in ring configuration for providing redundancy in the land OFC network **(Subsidy of Rs. 20 Crore towards CAPEX to BSNL as per decision taken by TC in the meeting held on 07.11.2014 on TRAI recommendations).**

- Work awarded to BSNL on nomination basis

- Technical requirements & detailed cost estimates being vetted by a technical group under Member (Technology) on the basis of DPR received from BSNL

- Draft Recommendations of the Technical Group circulated among Committee members for seeking comments (CAPEX Rs. 38.05 Crore as against Rs. 20 Crores estimated by TRAI)

- Report targeted to be finalized by 31.03.2016 by the Technical Group taking into consideration the additional inputs received from BSNL

- BSNL has already floated tender for procurement of OFC cable & associated equipment and for trenching/ laying of OFC

- Telecom Commission Approval for the proposal based on the DPR to be sought by March 2016

e) Augmentation Satellite Bandwidth in Lakshadweep Islands:

- Work awarded to BSNL on nomination basis with estimated investment of **Rs. 18.05 Crore** towards CAPEX as per TRAI recommendations dated 22.07.2014

- OPEX/ transponder charges to be funded by UT Administration/ MHA

- Technical requirements & detailed cost estimates being vetted by a technical group under Member (Technology) on the basis of DPR received from BSNL

- Approval of Telecom Commissions to be sought by Policy Cell of DoT by March 2016

f) Provision of 2G (voice) mobile coverage in Lakshadweep Islands:

- Out of 21 villages as per Census 2011, only 6 inhabited villages
- Out of total 6 inhabited villages, 5 villages having 2G mobile coverage and the single uncovered village having population of 11 only not being covered at this stage
- 10 new BTSs proposed to be installed for augmentation of 2G to improve the quality of service as per TRAI recommendations/ TC approval
- As per TC decision dated 07.11.2014, the work is to be awarded through competitive bidding basis according to the normal mode of funding by USOF
- **DoT was requested to award the work to BSNL on nomination basis in place of competitive bidding process in view of only 10 towers to be installed in Lakshadweep.**
- As per recent TC decision dated 10.11.2014, the work has been awarded to BSNL on nomination basis after a survey to be done by BSNL and DPR prepared for this purpose, limiting the total expenditure for such augmentation to **Rs. 8.07 Crore**.
- BSNL has been requested to submit the DPRs vide this office letter dated 04.01.2016

g) Submarine OFC Connectivity from Mainland India (Kochi) to Lakshadweep:

- TRAI recommended that keeping in view strategic importance of Lakshadweep, a secure and reliable connectivity should be established through a submarine cable. This cable will connect Kochi/Cochin with its headquarter i.e. Kavaratti and other major islands viz. Agatti, Androth, Kalpini, Amini and Minicoy. For this purpose 936 Km submarine cable may be laid with an estimated expenditure of **Rs 468 crore**
- While accepting the need to provide robust and reliable telecom connectivity to Lakshadweep Islands, Telecom Commission accorded 'in principle' approval to undertake a cost benefit analysis and feasibility study for laying submarine OFC in Lakshadweep along with validation of the estimated cost before proceeding ahead

- Work awarded to TCIL on 30.10.2015 for carrying out cost benefit analysis and feasibility study along with validation of the estimated cost for Submarine OFC connectivity between Mainland India and Lakshadweep Islands
- Draft Report submitted by TCIL on 04.11.2015, which is under examination

BE 2016-17

In view of the above mentioned ongoing and new activities, USOF has projected an amount of Rs. 7350.00 Crores in the Budget Estimate (BE) for the year 2016-17. A sum of Rs.2755.00 crore has been provided under the plan 2016-17 The details of projections is as under:

S.No.	Scheme	Estimated Expenditure
1	NOFN	5000.00
2	LWE	900.00
3	Comprehensive Telecom Development Plan for NE Region	775.00
4	2G Coverage in uncovered villages in Himalayan States & Western Border States	300.00
5	Other Schemes	375.00
	Total	**7350.00**

It is expected that in the financial year 2016-17, USOF activities would progress considerably and bring about a resultant positive impact on rural connectivity, tele density and socio-economic progress.

DISBURSEMENT STATUS

(I) Rs. 2086.98 Cr was disbursed during the financial year 2014-15 (RE).

(II) A budgetary allocation for the Financial Year 2015-16 BE of Rs. 2400 Crore was received for all USOF schemes. In RE (2015-16), Rs. 3100 Crore has been received for various USOF schemes. As on 31.12.2015, Rs. 1302.46 Crore has been disbursed.

(III) A review of performance for the year 2014-15, first nine months FY 2015-16 and projected performance for the remaining three months of FY 2015-16 is appended.

2.2 Telecom Engineering Centre (TEC)

Telecom Engineering Centre, as a part of DoT, Government of India, has its headquarters at New Delhi. The TEC is responsible for the standardization and development of generic requirement, interface requirements for Telecom Equipment services and products. It is also responsible for new telecom technology study, trials, evolution and induction in the network. A sum of Rs.10.00 crore has been provided under the plan 2016-17 for the setting up of NGN Lab for testing and certification of transport equipment under NGN test bed and Outcome Budget[9] has been prepared for the same.

2.3 Wireless Planning & Coordination (WPC)

The approved plan outlay of Wireless Planning and Coordination Wing for the year 2016-17 is 0.70 crore. WPC, as part of the Telecom Sector Reform Technical Assistance Project, has implemented National Radio Spectrum Management and Monitoring System (NRSMMS). This project strives to improve the utilization of Radio Frequency Spectrum, which is a scarce national resource and essential for modern telecommunication services. Under this project, spectrum management and monitoring functions have been automated with a view to making spectrum management process more transparent, effective and efficient. The Outcome Budget[10] of WPC relates to the residual payments and the AMC being undertaken under this project.

2.4 Wireless Monitoring Organization (WMO)

The approved Plan Outlay for Wireless Monitoring Organization is Rs.15.00 crore for the year 2016-17 and the Outcome Budget[11] relates to the outlay. The funds would be utilized mainly for the establishment of 6 additional Wireless Monitoring Stations (WMSs) at Bhubaneswar, Dehradun, Lucknow, Patna, Raipur & Vijayawada, augmentation of training facilities, upgradation of Microwave Monitoring Terminals, procurement of SHF monitoring facilities and civil works.

2.5 Centre for Development of Telematics (C-DOT)

Centre for Development of Telematics (C-DOT) is the Telecom Research and Development Centre of the Government of India. It is an autonomous scientific society which develops total telecom solution technologies and applications for the fixed line, mobile and packet based

[9] Refer Annexure-B
[10] Refer Annexure-C
[11] Refer Annexure-D

converged network and services. C-DOT's current focus is on design and development of Communication & Security, Research and Monitoring related to security management for law-enforcement agencies, the development and deployment of next generation networks and cost effective rural wireless solutions. A plan outlay of Rs. 320.00 crore has been approved for C-DOT during 2016-17 with Rs. 220.00 crore as budgetary support and Rs.100.00 crore from the internal resources (IEBR) of C-DOT. The projects to be undertaken by C-DOT during 2016-17, which are part of the Outcome Budget[12] comprise of security related projects, development of technology for rural areas, technologies for the NE Region, broadband technologies and Strategic and Enterprise solutions etc.

2.6 Telecom Regulatory Authority of India (TRAI)

A sum of Rs. 16.00 crore has been provided under Plan for the telecom regulatory authority. The quantifiable deliverables/physical outputs related to TRAI are related to the various proposed studies/consultancies to be undertaken by TRAI and on the training to TRAI officials on technical and regulatory issues. The Outcome Budget[13] for TRAI pertains to the above parameters.

2.7 Telecom Disputes Settlement and Appellate Tribunal (TDSAT)

A sum of Rs.1.10 crore has been provided under Plan to TDSAT. The funds would be utilized for up-gradation of reference library, holding of seminars on telecom disputes and settlement, study tour for familiarization with telecom regulatory environment/training. The Outcome Budget of TDSAT, therefore, relates to the above facilities.

2.8 Bharat Sanchar Nigam Limited (BSNL)

Bharat Sanchar Nigam Ltd. (BSNL) has an approved Plan Outlay of 7317.00 crore from IEBR without GBS for the year 2016-17. The funds would be utilized for the provision of telecom services, internet & broadband facilities amongst other programmes given in the Outcome Budget[14].

2.9 Mahanagar Telephone Nigam Limited (MTNL)

[12] Refer Annexure-E
[13] Refer Annexure-F
[14] Refer Annexure-H

The approved plan outlay of MTNL for the year 2016-17 is 649.03 crore with no budgetary support. The resources would be generated by the company through its internal and extra budgetary resources. The outcome targets as given in the Outcome Budget[15] of MTNL mainly relate to increase in the net switching capacity, IT related services and to support Expansion in New Services Areas abroad and national acquisitions.

2.10 ITI Limited

ITI Limited has been provided Rs. 80.00 crore as budgetary support under plan for 2016-17

2.11 DoT Projects

The total budgetary support of 2752.20 crores include provision for the following projects and the Outcome Budget[16] has been prepared accordingly.

(a) National Institute of Communication Finance

(i) Human Resource Management for IP&TAFS

- **Mid Career Training (MCT):** A five stage MCT programme for IP&TAFS officers has been conceived by the National Institute of Communication Finance (NICF) in pursuance of the National Training Policy of the Department of Personnel & Training. A provision of Rs. 6.50 crore has been made in BE 2016-17. The endeavour would be to equip the officers to handle conflicting interests and demands and to interface effectively with policy makers. An intensive exposure to the best practices in the international arena would be provided at every stage.

  NICF proposes to conduct MCT-I and MCT-II for officers of IP&TAFS during 2016-17. This will aim at developing right skill, knowledge and attitude at various stages of their career.

- **Induction and In-service Course:** In pursuance of the National Training Policy frame work the NICF is imparting (a) Induction Training at the time of entry into service in respect of IP&TAFS officers at the time of their induction through Civil Services Exams; and (b) In-service training at suitable intervals to all categories of IP&TAFS cadres including Group "B" & "C". The inservice training programmes will be specifically designed in consultation with other partner institutions/consultants/experts to meet the requirements of the target groups. An amount of Rs. 2.50 crores has been provisioned in BE 2016-17 for this purpose.

[15] Refer Annexure-I
[16] Refer Annexure-K

- **Institutional and Capacity Development Initiatives:** Keeping in view the decision of the Government of India in accordance with 2nd Administrative Reforms Commission and 6th Central Pay Commission to move towards a competency based human resource development/management frame work there is proposal to re-orient/ strengthen the human resource management and development processes of IP&TAFS. A series of projects are proposed to be undertaken for this purpose. Some of them are (a) Development and piloting new capacity development initiatives in communication sector; (b) Standardization processes, bench marking and quality certification of IP&TAFS officers (c) Setting up of e-learning system etc. An amount of Rs.1.00 crore has been allocated for this purpose in BE 2016-17.

(ii) **Physical Infrastructure for National Institute for Communication Finance (NICF):**

A separate premises and campus with state-of-the-art training and residential facilities for NICF at Ghitorni, New Delhi has been envisaged for the Twelfth Five Year Plan. Foundation stone for the institute has already been laid by Hon'ble MOC&IT. Necessary approvals from Local Bodies is expected to be received within the first quarter of 2016-17. Parallel activities for preparation of preliminary Estimates-cum-Detailed Estimates and tendering will also be initiated during the first quarter of the 2016-17. The construction of project is likely to take off from the month of October-November 2016. A provision of Rs. 17.00 crore has been made for this purpose during 2016-17.

(b) OFC based network for Defence Services (DS): Cabinet Committee on Infrastructure (CCI) in its meeting held on 3rd December 2009 approved the alternate communication network for Defence Services for release of spectrum.

This project is meant for building an exclusive dedicated alternate communication network for Defence Services in order for them to vacate the occupied frequency spectrum to be used for the next generation of mobile telephone and consequently the higher national growth of subscriber base. The spectrum available for mobile telephony has become inadequate due to the increasing demand of mobile services in the country. The work for Air Force network was started in 2006 and has been dedicated to the nation by 14.09.2010. The Army and Navy component of the network comprising of 219 and 33 sites respectively throughout the country has to be completed by December, 2012. The components of these networks are DWDM equipments, IP-MPLS Routers Carrier Ethernet based Router and Switches. IMS Equipments along with Network Operating Centres (NOC), Data Centres, Network Management System (NMS), Security and Synchronization devices along with back up media on Microwave & Satellite for some strategic locations. The cost of the project was Rs. 8098 crore with the time line of 36 months (i.e. upto December, 2012) for implementation of the project. The proposal has been approved by CCI (Cabinet Committee on Infrastructure) in its meeting held on 03.07.2012 with revised timelines of 36 months for Rs. 5236 crore over and above Rs. 8098 crore already approved by CCI (Cabinet Committee on Infrastructure) on 03.12.2009.

Revised target date of completion and reasons for time and cost overrun:

There is possibility of time overrun and cost overrun in the project. As per the Cabinet approval, the project was scheduled to be completed by July, 2015. The whole project has been divided in 09 components. Purchase Orders (POs) for OFC component have been placed. BSNL is in process of placing POs for other components. The likely date of completion of the project shall be known once all the POs are placed by BSNL. The project cost shall also depend upon the L1 rates of various tenders vis-à-vis the estimated costs. It has been decided by DoT that the case for approval of revised time schedule and revised cost shall be submitted to the competent authority once prices are discovered on placement of POs by BSNL.

The whole project is expected to be completed by September 2017. DoT monitors the project periodically at the level of the Secretary along with Defence Services and BSNL. Such review meetings have been held on 10.07.2015, 29.04.2015, 24.02.2015, 14.11.2014, 28.08.2014, 19.11.2015, 29.12.2015 and 03.02.2016

(c) Microwave link between Champhai to Zokhawthar

The telecommunication network at Zokhawthar is very poor. The Optical Fibre Cable from Champhai to Zokhawthar gets cut every few days. It is necessary to install Microwave link between Champhai to Zokhawthar.

The preliminary survey has been done for the proposed microwave link and it is observed that Champai to Zokhawthar radio link is feasible with a regenerator station in between i.e. at Melbuk. For setting up of the link, land will be required at Melbuk and Zokhawthar. Besides this, radio tower will be required at all three places. Estimated expenditure for setting up the link is about 4.73 Crore and royalty charges for the spectrum is Rs. 28.80 Lakh per annum. As the link is required for redundancy, viability gap funding will be required from Government for entire amount. BSNL has started the work on the project. The project is expected to be completed by March 2016.

(d) Establishment of Satellite Gateway assistance to BSNL

This Project is meant for grant of financial support to Bharat Sanchar Nigam Limited (BSNL) from Department of Telecommunications to establish GMPCS (Global Mobile Personal Communication by Satellite) Service which enables a subscriber to communicate from any point (irrespective of the location) through hand-held terminal. BSNL had proposed to establish the gateway under technology transfer from M/s INMARSAT. M/s INMARSAT's 100% owned retail arm 'Stratus' will be the executive provisioner of service to BSNL. The proposed gateway will enable global satellite mobile service under INMARSAT licence. DoT has given 'in principle' approval to provide support of $ 8 million to BSNL for establishment of GMPCS gateway in India. The Telecom Commission has recommended to grant a licence for **"Provision and Operation of INMARSAT Satellite based services using Gateway installed in India"** to M/s BSNL in the meeting of Telecom Commission

held on date 13.06.2014. An amount of Rs. 5.00 crore has been provided in the BE 2014-15 for this Project. Revised Proposal to provide budgetary support to BSNL amounting to Rs. 52 crore, as total cost of the project, to establish INMARSAT Gateway in India is under consideration and the gateway is expected to be installed by March 2016 and the services are expected to be started by BSNL by June 2016.

(e) **North East Projects executed by BSNL with Government Support**

During natural calamities, disruption of telecom link between Agartala and Guwahati often happens due to OFC damages, which is a major cause of concern for telecom services in NE Region. Therefore, an alternate OFC link is needed to be established to have redundancy. Creating an alternate path through Bangladesh would help in routing traffic from whole North-East Region to rest of India and it would substantially enhance the connectivity as well as reliability of telecom services in the North East.

(f) Internet connectivity in NE Region from Cox's Bazaar (Bangladesh):

- SEA-ME-WE-4 submarine cable landing station is available at Cox's Bazaar (Bangladesh) - operated by Bangladesh Submarine Cable Company Limited (BSCCL).
- Optical Fibre Cable (OFC) network is available up to Akhaura (border) in Tripura - operated by BSNL.
- The connectivity between Cox's Bazaar and Akhaura (border) - to be extended by BSCCL using network of Bangladesh Telecom Company Limited (BTCL).
- Necessary transmission facilities for hiring of International Internet Bandwidth from BSCCL: Optical Fibre Cable (about 3-4 km) is required to be laid from Agartala to Akhaura (ICP) by BSNL.
- BSNL has to Setup International Gateway (IGW) and Lawful interception and Monitoring (LIM) at Agartala.

Financial Implication: Total Capital Expenditure (CAPEX) of Rs.19.14 Cr is proposed to be funded from DoT. BSNL would bear the annual OPEX from its own resources (USD 1.2 Mn equivalent to Rs 7.9 Cr @ Rs 66 per USD).

Current Status: Competent authority has given its approval to implementation of project with financial support of Rs. 19.14 crore on 10.01.2015. This support by Government is to be provided to BSNL for capital investment required for establishing an International Gateway and Lawful Interception facility at Agartala along with necessary transmission facilities for hiring of International Internet Bandwidth (initially 10 G) from BSCCL. An agreement in this regard has been signed by BSNL with BSCCL on 6th June 2015. The project is expected to be completed by March 2016.

(g) Provision of high speed broadband on FTTH and WI-FI services at the residences of Hon'ble MPs. : (as on 31-8-2015).

Project Background:

The House Committee, Lok Sabha has assigned MTNL the work to provide high speed Broadband on FTTH and Wi-Fi services at the residences of Hon'ble MPs in Delhi. A total number of 735 Hon'ble MPs are proposed to be covered under the schemes, who have been allotted residential accommodation in New Delhi. The accommodations covered consist of 334 numbers of Kothis/Bunglows and 401 numbers of flats. Grant for the project is from DoT .

MTNL has submitted detailed plan proposal to DoT. DoT has accorded approval of upfront grant of Rs 43.20 crore vide letter No. 19-37/2014-SU-II Dated 27-2-15, to fund the capex requirement subject to actual expenditure whichever is lower.

DoT has released Rs 6 cr in 2014-15 and Rs 28.56 Cr in 2015-16 till 31-8-2015.

Project Status:

This project has three components viz. Optical Fibre Cable(OFC) Laying, FTTH internal wiring and services and Wi-Fi service. The status of these components is as follows:

Optical Fibre Cable(OFC) Laying : Completed.

FTTH internal wiring and services : Wiring has been completed in more than 95% houses. Work is in progress in rest of the residences.

Wi-Fi service: PO has been issued on 18th September'2015. Work is expected to be over by March 2016.

(h) Technology Development & Investment Promotion (TDIP): The Government has to play an important role in promoting investment in the telecom sector including manufacturing and export of telecom equipments and services. Technology Development & Investment Promotion (TDIP) scheme is a scheme to fund activities related to technology development like R&D and IPR generation and also for promoting manufacturing and export of telecom equipment and services. For meeting the requirements of funds for various promotional schemes like grant in aid to Telecom Centres of Excellence, national and international participation in exhibitions and to promote export, assistance is provided for following activities:

(i) Grant-in-aid to Telecom Centers of Excellence (TCOE) set up in PPP mode by DOT.
(ii) Promotion and development of manufacturing and export in telecom sector.
(iii) Promotion of telecom sector through conferences and exhibitions in India and abroad.
(iv) Any activity related with technology development and investment promotion.

	USOF 2016-17								Ref:2.1
F OUTCOME BUDGET 2016-17									ANNEXURE-II
S No.	Name of the Scheme/ Programme	Objective/Outcome	Outlay 2016-17 (Rs. In crore)			Quantifiable Deliverables/ Physical Output	Projected Outcome	Processes/ Timelines	Remarks/Risk factors
1	2	3	4			5	6	7	8
			4 (i) Non Plan Budget	4(ii) Plan Budget	4(iii) Complementary Extra-Budgetary Resources				
1	Mobile phase-I	Setting up and managing 7353 infrastructure sites and provision of mobile services in rural and remote areas		3.75					See chapter 2.1
2	VPTs in newly identified uncovered inhabited villages as per Census 2001 (New VPT -2)	VPTs in newly identified uncovered inhabited villages as per Census 2001 (New VPT -2)		3.23					The rollout period has been closed on 31.03.2015. The BSNL has requested for extension of the scheme. The same is under examination (See chapter -2.1.1d)
3	Rural Wireline broadband connectivity in rural and remote areas	Total 888832 BB connections and 28672 kiosks	-	43.75	-	-	-	-	Scheme ended in January 2015 (See chapter 4.6.2) .
4	Augmentation, creation & management of OFC Network in Assam service area	OFC network augmentation between SDHQ & DHQ in Aasam		30.00		complete Assam, 9 OFC Nodes	complete Assam, 9 OFC Nodes	Dec '2016	Out of 354 nodes, 37 nodes are dropped as per the justification proposal by BSNL (See chapter 4.6.3.1)

5	National Optical Fibre Network (NOFN)	Provision of BB connectivity to approximate 250,000 Gram Panchayats		600.00		1. 50,000 GPs end to end connected with equipment 2. PLB 90,000 Kms 3. OFC 1,15,000 Kms	1. 50,000 GPs end to end connected with equipment 2. PLB 90,000 Kms 3. OFC 1,15,000 Kms	Dec '2016	Bharatnet not taken into consideration (See chapter 4.6.5)
6	Sanchar Shakti	For provision of mobile Value Added Services to rural women's SHGs for a period of one year		0.55					(See chapter 4.6.7)
7	Augmentation, creation & Management of OFC network in NE-I & NE -II (Earlier titled as SAs other than Assam)	OFC n/w augmentation between SDHQ & DHQ in NE-I & NE-II,595 Nodes (188 in NE-I and 407 in NE-II)		48.72		331 Nodes in NE-II	331 Nodes in NE-II	Manipur and Nagaland by July, 2016 and Arunachal Pradesh by Jan, 2017	
8	Mobile connectivity in Left Wing Extrimism (LWE) affected areas.	Provision of mobile services in about 2199 locations of LWE affected areas as idetified by Ministry of Home Affairs.		300.00		363 tower		30.6.2016	The Scheme has been extended up to 30.06.2016. As on 31.12.2015, Mobile Services from 932 locations have started (See chapter 4.6.6) .
9	Support for Rural Wireline Household DELs installed prior to 01.04.2002			1250.00					Subsidy support for sustenance for Rural Wireline Connections installed before 01.04.2002 for the period of one year w.e.f. 18.07.2012 to 17.07.2013 as per TRAI recommendation to BSNL.
10	Comprehensive Telecom Development Plan for NE Region	Providing Mobile Coverage to the uncovered village in the North Eastern Region		275.00					See chapter -4.6.3.2

11	2 G coverage in Uncovered Villages in Himalayan State and Western Border States.	Providing Mobile Coverage to the uncovered villages		100.00					See chapter -2.1.1.c
12	Satellite Bandwidth Augmentation in Lakshadweep Islands	Satellite Bandwidth Augmentation in Lakshadweep Islands		30.00					Approval of Telecom Commission is to be sought by Policy Cell by Feb. 2016.
13	2G Augmentation in Lakshadweep Islands	2G Augmentation in Lakshadweep Islands		5.00					Work Awarded to BSNL on nomination basis. BSNL has been requested vide letter dated 04.01.2016 to submit DPR
14	Intra Islands OFC in Andaman & Nicobar Islands	Infrastructure Islands OFC in Andaman & Nicobar Islands		10.00					Telecom Commission approval for the proposal based on the DPR to be sought by March, 2016
15	Mobile Services in States with less numberes uncovered villages.	Mobile Services in States with less numberes uncovered villages.		25.00					2.1.1d
16	Submarine OFC connectivity between Chennai and Andaman & Nicobar	Submarine OFC connectivity between Chennai and Andaman and Nicobar		10.00					Direct communication link through a dedicated submarine OFC from Main Land India to Andaman and Nicobar Islands has been planned.
17	2G Augmentation in Andaman and Nicobar Island (Uncovered villages and NH 223)	2G Augmentation in Andaman and Nicobar Island (Uncovered villages and NH 223)		20.00					Revised DPR submitted by TCIL on 15.01.2016
	Total			**2755.00**					
	Rounded to Rs.			**2755.00**					
1. Subsidy claims are received and disbursed in arrears after completion of the quarter in which the facilities are provided and/or remained operational.									
2. The financial outlay figures are estimated and subject to actual disbursement in arrears, based on timely submission of claims by USPs and number of facilities actually provided and/or working.									
Notes:									

1. Mobile Ph-I: Financial outlay has been proposed for settlement of spill over.
2. Financial outlay has been proposed for settlement of spill over .
3. Financial outlay has been proposed for settlement of spill over .
4. OFC Assam: Augmentation, creation & management of OFC Network with higher band width to SDHQ/Blocks in Assam.
5. National Optical Fiber Network (NOFN). Plan to connect approximate 2,50,000 Gram Panchayats in the country through optical fiber utilizing existing fiber network of PSUs viz. BSNL, RailTel and Power Grid and laying incremental fiber wherever necessary.
6. Sanchar Shakti : To facilitate women's Self Help Groups (SHGs) access to ICT enabled services. Financial support from USO Fund is envisaged to be provided towards mobile VAS subscriptions for SHGs.
7.Agreement signed on 30.9.2014 to install 2199 tower (1836 new sites &363 sites already installed by BSNL) in Left Wing Extremism (LWE) affected areas .
8. 2 G coverage in Arunachal Pradesh and 2 District of Assam, 2G coverage in Uncovered Area & along uncovered National High Ways of NER except Arunachal Pradesh & Transmission Media Plan
9. 2 G Coverage in uncovered villages in Himalayan States and 2 G coverage in Western Border State.
10. Work for preparation of Detailed Project Reports (DPR) in respect of 937 Village, Uncovered Villages in Goa, Tamil Nadu, Uttar Pradesh, West Bengal, Daman, Dadar & Nagar Haveli has been interested to M/s Telecom Consultations India Limited (TCIL). The draft DPR for the state of Goa and UTs of Daman, DIU and Dadar and Nagar Haveli has been received and is under examination.

Annexure – B
Ref:2.3

TELECOMMUNICATION ENGINEERING CENTRE
Outcome Budget 2016-2017

(`Rs in Crore)

Sl. No.	Name of Scheme/ Programme	Objecttive /Outcome	Outlay 2016-17	Quantifiable/ Deliverables	Process/ Timelines	Achivements w. r. t. Col. (5) as on…..	Remarks
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	New Generic Requirements, Interface requirements and Service Requirements	Preparation of new GRs / IRs		12			
2	Review of GRs/ IRs	Revision of existing GRs / IRs		20			
3	Preparation of Test Schedule/ Test Procedure	Preparation of Test Schedule		32			
4	Type approval	Certification to authorise use of equipment in telecom network		No target defined			
5	Interface approvals of customer equipment			No target defined			
6	Certificate of Approval			No target defined			
7	Revenue (In crore)	Fee collection from testing		No target defined			
B.	**Project Activities**						
1	**NE- Region** **MH-45520020302 - TEC** 020152- M&E	Satellite based Broadband network ---------- EMF Measuring Instrument		0.0000			
	MH.52750080001-TEC						
1	**0101-NGN Lab**			0.3000			
2	**0103-EMF measuring Instruments** 010352- M&E	Procurement of EMF instruments for TERM Cells of DoT to carry out the measurements of radiation levels from various BTS towers.		4.0000			
3	**0102-SAR Lab-** (Mumbai & Delhi) 010252-M&E	To carry out testing and certification of mobile equipment about specific Absorption Rate(SAR)		0.2000			

4	**0105-Security Lab** 010552- M&E	To cater the telecom industry's need for security testing of various networks elements and CPEs		4.0000			
5	**0106-CPE Lab** 010652-M&E	To carry out testing of CPEs like telephone handset including multiline, cordless, CLIP, KTS, executive, modems, telephone attachment, POS terminals, SIP terminals, bluetooth, Wifi		5.0000			
6	**0107-Green Passport Lab** 010752- M&E	Certification of telecom product, equipment and service on the basis of ECR ratings, preparation of ECR document delineating the specification of the test procedure and methodology		0.2000			
7	0108-**Regional Test Lab** (Mumbai, Kolkata, Bengaluru, Delhi) 010852M&E	To carry out testing and certification of testing instrument		0.2000			
8	**LTE LAB at TEC**			0.3000			
9	**Cyber Securit Lab (NTI)**			0.2000			
10	**Knowledge Repository and Management Centre at NTIPRIT**			0.1000			
	Total			10.0000			

Annexure – C
Ref:2.3

WIRELESS PLANNING CO-ORDINATION
Outcome Budget 2016-17

(Rs in Crore)

S. No.	Name of Scheme	Objective/ Outcome	Outlay 2016-17			Quantifiable Deliveries/Physical Outputs	Projected Outcome	Processes/Timelines	Remarks /Risk Factors
1	2	3	4			5	6	7	8
			4(i)	4(ii)	4(iii)				
			Non-Plan Budget	Plan Budget	Complementary Extra-Budgetary Resources				
1	National Spectrum Management and Monitoring System (NRSMMS)	Supervision of maintenance of facilities procured under NRSMMS project. Follow up of Arbitration	Nil	BE 2.00	Nil	1. Maintenance of facilities procured under NRSMMS project to make the system operational. 2. Making of spill over payment, if any due after Arbitrator decision. 3. Upgradation of software/ hardware for ASMS/NSMS 4. Arbitration proceedings.	--	--	--

Annexure – D
Ref:2.4

WIRELESS MONITORING ORGANISATION
Outcome Budget 2016-17

(Rs in Crore)

No.	Name of Schemes/ Programmes in 12th FYP	Objective/ Outcome 12th FYP	Outlay 2016-17 (Rs. In Crores)			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcome	Process/ Timelines	Remarks / Risk Factors
			Non-Plan Budget	Plan Budget	Complement-ary Extra-Budgetary Resources				
1.	2	3	4			5	6	7	8
	Technical Schemes		4(i)	4(ii)	4(iii)				
	Technical Schemes			**6.2**	Nil	**Procurement of:**			
1.1	Mobile Monitoring, including Direction Finding, facility	06 Nos. V/UHF vehicle-mounted mobile and portable monitoring, including Direction finding (DF) terminals for six new Wireless Monitoring Stations (WMSs) established in 11th FYP.	N/A	0.35	Nil	(a) Procurement of six vehicle-mounted mobile and portable monitoring terminals for the six newly established monitoring stations at an estimated cost of Rs 44 crore. However token amount of Rs 0.35 Crore has been kept for this scheme. If the scheme is likely to completed in FY 2016-17 then additional fund will be demanded in RE 2016-17. (b) Scheme is subject to decision of the arbitrator & subsequent approval of competent authorities.	1. To equip new WMSs with monitoring facilities. 2. To augment / enhance monitoring capabilities at existing WMSs.	To be completed within 12th FYP	6.2 Crores have been kept for implementation of various Technical Schemes as staed in Column 2.
1.2		04 Nos SHF Vehicle Mounted & Portable monitoring Terminals		0.25	Nil				To be implemented with the approval of competent authority and concurrence of IFA

No.	Name of Schemes/ Programmes in 12th FYP	Objective/ Outcome 12th FYP	Outlay 2016-17 **(Rs. In Crores)**			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcome	Process/ Timelines	Remarks / Risk Factors
			Non-Plan Budget	Plan Budget	Complement-ary Extra-Budgetary Resources				
1.	2	3	4			5	6	7	8
	Technical Schemes		4(i)	4(ii)	4(iii)				
2.1	Fixed Monitoring, including Direction Finding, facility	06 Nos Fixed HF Monitoring Facility	N/A	0.10	Nil	Procurement of 6 Nos. of fixed HF Fixed Monitoring facility for six new WMSs at an estimated cost of Rs 7 crore. However a token amount of Rs 0.1 Crore has been kept for this scheme. If the scheme is likely to completed in FY 2016-17 then additional fund will be demanded in RE 2016-17.	To address monitoring of transmissions in HF and lower bands as well as satellite emissions	To be completed within 12th FYP.	To be implemented with the approval of competent authority and concurrence of IFA
2.2		Phased replacement of HF & VHF monitoring equipments at monitoring stations against the condemned equipment at the cost of Rs 4.0 Crore.							

No.	Name of Schemes/ Programmes in 12th FYP	Objective/ Outcome 12th FYP	Outlay 2016-17 **(Rs. In Crores)**			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcome	Process/ Timelines	Remarks / Risk Factors
			Non-Plan Budget	Plan Budget	Complement-ary Extra-Budgetary Resources				
1.	2	3	4			5	6	7	8
	Technical Schemes		4(i)	4(ii)	4(iii)				
3.1	Specialised hardware/ software and auxiliary components	Procurement of Real Time Signal Analyzer/Portable Signal Analyzers etc	N/A	5.5	Nil	(a) Procurement of Radio Network Analysers at an cost of Rs 2.0 Crore. (b) Replacement of existing five nos. specialized noise measurement equipments at the cost of Rs 5.5 Crore.	To enhance monitoring capabilities of special transmissions	To be completed within 12th FYP	To be implemented with the approval of competent authority and concurrence of IFA
3.2		Replacement of Existing five RNSU equipments							
4	Manpower requirement	▪ Manning of Training and Development Centre ▪ Manning of six new WMSs created in 12th Five Year Plan ▪ Manning of microwave monitoring terminals ▪ Manning of Satellite Monitoring facility ▪ Manning of Type approval, testing, calibration and maintenance facility ▪ Manning of Project Implementation Unit	N/A	*	Nil	Creation of Project Implementation Unit.	To facilitate speedy implementation of Plan schemes under 12th FYP. Creation of posts under various 12th FYP schemes.	To be completed within 12th FYP	*Salary component to be met from Budgetary allocation under S.No.1 above

Sl. No.	Name of Schemes/ Programmes 12th FYP	Objective/ Outcome 12th FYP	Outlay 2016-17 **(Rs. In Crores)**			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcome	Process/ Timelines	Remarks / Risk Factors
			Non-Plan Budget	Plan Budget	Complement-ary Extra-Budgetary Resources				
1.	2	3	4			5	6	7	8
	Technical Schemes		4(i)	4(ii)	4(iii)				
5.	Misc. Expenses i.e. Salary, Office & Travel etc.	Expenditure under the different heads including salary in respect of 6 new WMSs .	N/A	**1.5**	Nil	Misc. office expenses, Travel, Advt. Salary of the staff etc	Expenditure under the different heads including salary in respect of 6 new WMSs & PIU.		Subject to filling up of posts Cost included in S.No- 1
	Total (A) Technical Schemes		N/A	**6.2**	Nil	N/A	N/A		.
6	**<u>Civil Schemes</u> Civil Works Total (B)**	Miscellaneous Civil works such as procurement of land, construction of office buildings, staff quarters & ancillaries.	N/A	**5.3**	Nil	Procurement of land & civil construction works at Dibrugarh, Lucknow, Patna, Vijayawada, Ranchi, Bangalore, Jammu, Jalandhar, Silliguri, , Goa, Mumbai, Delhi, Nagpur, Dehradun, Raipur, Bhubaneswar etc.	Housing of Monitoring establishments and staff in their own building	Execution of ongoing/ sanctioned civil construction works within 12th FYP	Subject to (i) availability of land with State Govts/BSNL, & dependency on construction work by CPWD/BSNL on time (ii) administrative approval & financial concurrence by the competent authority.

7	**Civil Works North East Under Head 0455200200204 01- Office Building 01 Land 0153 Major Works**	Misccelleneous Civil Works such as Procurement of Land, Construction of office building, staff quarters etc for North Eastern Region	N/A	**2.0**	Nil	Procurement of Land & civil construction works at WMS Dibrugarh, Shillong	Housing of Monitoring establishments and staff in their own building	Execution of ongoing/ sanctioned civil construction works within 12th FYP	Subject to (i) availability of land with State Govts/BSNL, & dependency on construction work by CPWD/BSNL on time (ii) administrative approval & financial concurrence by the competent authority.
	G. Total (A) + (B)		N/A	**15.00**	Nil				

iv) In context to para (iv) of letter it may be stated that " The performance of the schemes are currently being monitored by a team of officers of Wireless Monitoring Organization headed by Director(W.M) and Sr Deputy Director(PI), Engineer In Charge(PI) & Engineer(PI) as members.

Annexure - E
Ref:2.5

CENTRE FOR DEVELOPMENT OF TELEMATICS
Outcome Budget 2016-17

Rs in crores

Annual Plan (2016-17)										
		Name of the Ministry/Department : Center for Development of Telematics (C-DOT)								
		Statement of Outlays and Outcomes / Target for FY 2016-17								
Sl. No.	Name of scheme / programme	Objective/ Outcome	Outlay 2016-17 (Proposed)			Quantifiable Deliverables/ Physical output of the project	Projected Outcome for the FY 2016-17	Process/ Timelines for the FY 2016-17		Remarks / Risk factors
1	2	3	4							
			4(i)	4(ii)	4(iii)					
			Non Plan Budget	Plan budget	Complimentary extra budgetary Resources					
1	Communication security & research monitoring (CMS)	Progressively scaled up infrastructure creation for CMS national rollout.		59.00		• Infrastrucutre consisting of CMC data centre, CMC DR, RMCs in 21 LSAs, & ISFs at TSPs /ILDs / IPLCs locations fin 21 LSAs or pan roll-out CMS services in 21 LSAs	• CMC data centre DR build; • CMC DR infrastructure; • Field service start prgressively; • Technology support for bug fixes, enhancements, etc.	Q1	• CMC DR data centre build installation & commissioing ; • DR IT infrastructure installation • Support for Field service start in various LSAs & enhancements as per LEAs' requirements, etc.	
								Q2	• DR testng & acceeptance • Support for field service, & enhancements as per LEAs'	

									requirements, etc.	
								Q3	• Support for field field service start & enhancements as per LEAs' requirements, etc.	
								Q4		
2	Broadband Technologies	Design, Development of a high capacity (terabit) router technology.		10.00		• Multi terabit Router.	• Pilot / field trial of mulit terabit router; • ToT for multi-terabit router	Q1	• System integration & testing with security applications	
								Q2	• Commencement of system validation	
								Q3	• Pilot / fiedl trial of system	
								Q4	• ToT (Transfer-of-technology)	
3	Next generation mobile technology	To focus on Research & Development efforts on emerging Wireless Technologies for broadband Networks - 4G Technology.		22.00		4G Wireless Development				
3(i)	LTE-A	Design & development of Femto eNodeB base station and the corresponding Evolved Packet Core (EPC).		22.00		• Femtto eNode-B based LTE system ; • LTE macro base station development; • Evolved Packet Core (EPC)	• Pilot / field trial of LTE system integrated with RRH, control modules; • Pilot / field trial of LTE macro system;	Q1	• LTE femto eNodeB, integrated with RRH - testing & validation in TDD, FDD	

						development; • RRH-based femto eNodeB LTE system for rural	• ToT for femto LTE, RRH		bands; • LTE macro integrated with RRH - testing & validation • ToT commencement for LTE in TDD & FDD bands	
								Q2	• LTE system in TDD band integrated with RRH & control modules - testing & validation	
								Q3	• Field trial of LTE system - femto & macro integrated with RRH (in TDD & FDD band)	
3(ii)	White Space Radio	To develop a radio system to make use of the unused/underutilised spectrum to connect rural areas		30.00		Radio System consisting of Transmit and Receive terminals and conducting field trials	Design & development of Tx / Rx terminals	Q1	Subsystem and card specifications	
								Q2	Card design	
								Q3	PCB fabrication and testing	
								Q4	System Integration	
4	Carrier networks' transport technology	To focus on Research & Development of optical access and aggregation system (OAAS) & optical Core networks (OCN)		65.00		Next Generation PON (NG-PON) & DWDM-based core network				

4(i)	Optical Access & Aggregation system (OAAS)	Development of next generation PON technology		15.00		• 32G PON system : WDAN (WDM-based technology) • 10G- GPON system : XG- PON (TDM-based technology)	• Field trial for NG (Next Generation PON); • ToT for 32G WDAN PON	Q1	• Technology trial for 32G WDAN system; • Design & development of XG-PON OLT & ONT	Development plan is dependent upon availablity of chipset / devices from the vendor
								Q2 &Q 3	• Design & development of XG-PON OLT & ONT	
								Q4	• ToT for 32G WDAN and validation of XG-PON technologies	
4(ii)	Optical Core Network (OCN)	Development of 40G / 100G DWDM Optical Network System		50.00		• Terminal Equipment (TE) • ILAs (In Line Amplifiers) • ROADMs (Reconfigurable Optical Aaa-Drop Multiplexer) • LCT /EMS	• DWDM solution - 40G / 100G for long haul applications	Q1	• System integration, testing &validation	
								Q2	• Pilot / Field trial of DWDM system.	The trial is subject to availablity of field trial site having multiple 100G traffic.
								Q3	• Offer for TEC testing .	
								Q4	ToT for 40G / 100G DWDM system.	
5	Secure wireless & wire-line networks	Setting up a secure mobile communication networking using standard wireless technologies such as 3G, WiFi.		4.00		• Pilot trials of WiPS (Wireless phone Secure); launch of WiPS services; technology transfer of hand-held devices	• Integration testing of WiPS with SDCN network; function & feature validation of WiPS; launch of WiPS services for end-users	Q1	• Integration testing of WiPS with SDCN network.	

								Q2	• WiPS functional & feature validation in the trial network	
								Q3		
								Q4	• WiPS service commencement for end-user; • ToT of hand-held device - Tablet	
6	Telecom services & application	Development of machine-to-machine (M2M) communication system - One M2M compliant Service platform for M2M service provider		15.00		• Desing and development of OneM2M nodes, namely, Infrastructure Node (IN), Middle Node (MN), Application Service Node (ASN) for machine-to-machine communication	• Lab realization of IN, MN / ASN based on rel 1.	Q1	Software & hardware spec. finalization based on rel 1 for 4 nos. of Common Service Functonalities (CSF). Planning & initiaiting process for lab set-up	
								Q2	• Hardware & Software design completiont for IN, MN/ASN for 4CSFs; • M2M Lab set-up progressively	

								Q3	• Hardware & Software design implementation for IN, MN/ASN for 4 CSFs; • Design implementation of demo application for OneM2M-based solution; • M2M Lab set-up completion for IN, MN/ASN	
								Q4	• Harwarte & software integration & testing; • OneM2M-based solution lab demonstration	
7	Satellite based technology	This scheme envisages the development of product(s) / technology based on the emerging requirements from prospective user organization(s)		20.00		Development of Satellite-based Carrier grade Hub baseband system with redundancy	Carrier grade Satellite Hub Baseband system with enhanced features	Q1	Multiple card development for Carier grade Satellite Hub including PCB fabrication, Card assembly and Algorithm development.	
								Q2	Cards testing including interfaces & multichannel capacity testing with	

									all types of Demodulators & Modulator.	
								Q3	Integration of CDOT modules with Customer modules & testing	
								Q4	Integration support with Satellite	
8	Next generation security for telecom data network			25.00						
8(a)	Advanced Interception and Monitoring System (AIMS)	To align development so that present CMS implementation with seamless assimilation of advance functionalities and capabilities evolve to new framework/ architecture to address the upcoming security challenges of the evolving networks.		10.00		Advance Intelligent Monitoring System (AIMS) for CMS archiitecture scaling up & interception solution for new technology, e.g. LTE, IMS converged & fixed mobile, etc.	• Pilot trial of AIMS for CMS migration to new architecture • Field deploument of advance Intelligent Manager (IM) for CDR analysis	Q1	• Load testing of AIMS • CDR collection software testing with TSPs	
								Q2 &Q 3	• AIMS validation framework; • Advance (IM)deployment in the field for CDR analysis.	
									• IM customization as per LEAs field recquirements & efforts to continue to carry-out field deployments	

								Q4	• Indegnous encryption development; • AIMS software propogation in he field for CMS migration to enhnaced framework; • Efforts to continue to carry-out field deployments of IM for CDR analysis.	
8(b)	Centre of Excellence (COE)	To analyse the information obtained legally and ethically from public sources on internet e.g. various social networking sites, news, blogs, etc. and dynamically build tailored knowledge through process of intelligence for agencies engaged in online event monitoring, trends analysis, etc.		15.00		The cloud based infrastructure with Big Data analytics to be setup centrally and offered as a service to LEAs.	Sentiment Analysis - *Prototype* based on data from some social networking-site	Q1	• Literature study on the analysis solution based on open source intelligence. • Software Requirement Specification (SRS) formulation	Big data analytics is evolving field and its implementation is subject availability of requisite skill-set and necessary tools.
								Q2	• Data acquisition tool - design, development. & testing • Big data analysis lab set-up	

								Q3 & Q4	• Sentiment Analysis tool design, development & testing • Prtottype software release for sentimental anaylysis	
9	Power Efficient	To develop an alternate power supply system based on Green Technologies specification for mobile towers (BTS) and also to supply power supply to current and future products developed in C-DOT.		3.00		Green Power supply system with rated solar input power of 75W for small range of products, 2000W for mobile towers (BTS), etc., and more than 2000W based on emerging field requirements.	• 2000W power supply system - field trial, ToT, etc.; • Design, development & trial of 5000W power supply system	Q1	• 2000W power supply system - field trial, ToT, etc.; • 5000W power supply sys. design specification, architecture finalization, etc..	
								Q2	• 5000W power supply sys. design implementation, testing	
								Q3	• Pilot / field trial of 5000W power supply system; • ToT process commencement for 5000W system	
								Q4	ToTcompletion for 5000W system	

10	Enabling technologies & telecom networks	This scheme helps C-DoT to maintain its position of excellence in R&D, by conducting basic research as well as conducting studies and setting up pilots in new/green field areas in Telecom Enabling technologies & Networks.		15.00		Projects related to feasibility study / Proof of concept and setting up pilots in new / green field areas in telecom enabling technologies and networks.	•Feasibility study report • Prototype	Q1-Q4:	• Feasibility studies on the emerging subject technology areas are planned during the year:	
11	Enhancements / New Features / upgradation / adaptation / technical support for developed technologies			165.00						
11 (i)	Product Design / Support	To focus on Research & Development efforts on enhancements, upgrade, evolution, feature addition, scalability, value addition and customization of developed technologies to meet changing requirements.		27.00		Design support for developed technologies		Q1 - Q4	Regular ongoing design enhaqncement support for various technologies, optical, wirelss, network management, router, etc.	

11 (ii)	IEBR supported programs - technology field implementations , etc.	To focus on technology field implementations / roll-outs, for some of the successfully field-tried systems		138.00		Support for field implementations for technologies		Q1 - Q4	Regular ongoing upport for various technologies' implementation in the field e.g ,MAX-NG, NGN, network management, etc..	
12	Campus Infrastructure	Construction of residential facilities for CDOTians within the Delhi campus area, to facilitate flexible working hours conducive for R&D culture.		2.00		Construction of dwelling & Hostel facilities for C-DOT staff & Project Board		Q1 to Q4		
	TOTAL			**405.00**						

Annexure –F
Ref:2.6

TELECOM REGULATORY AUTHORITY OF INDIA
Outcome Budget 2016-17

Sl. No.	Name of the Scheme / Programme	Objective / Outcome	Outlay 2016-17			Quantifiable deliverables / Physical outputs	Projected outcomes	Processes / Timelines	Remarks / Risk Factors
			4						
1	2	3	4(i)	4(ii)	4(iii)	5	6	7	8
			Non Plan Budget	Plan Budget (BE)	Comple-mentary Extra-Budgetary Resources				
1.	Institutional Capacity Building Project	To strengthen the Institutional capabilities of TRAI to perform its functions under the TRAI Act, 1999 including carrying out of Consultative studies on Regulatory Issues and provision of training	--	16.00 Crores	--	(a) Consultative Studies / Workshop on Regulatory issues. The list of proposed consultancies / Studies proposed to be taken during the year 2016-17 is enclosed at Appendix	The proposed studies will help TRAI in formulating its Recommendations and in other Regulatory functions	To be completed during 2016-17	
						(b) Provision of training of TRAI official on technical and Regulatory issues	To meet the training needs of TRAI officials		

Annexure G

Ref:2.7

TELECOM DISPUTES SETTLEMENT & APPELLATE TRIBUNAL (TDSAT)

Outcome Budget 2016-17

(Rs. in crores)

Sl.No.	Name of Scheme/ Programme	Objective/Outcome	Outlay 2016-17			Quantifiable Deliverables /Physical Outputs	Projected Outcomes	Process/ Timelines	Remarks/Risk Factors
1	2	3	4			5	6	7	8
			4(i)	4(ii)	4(iii)				
			Non-Plan Budget	Plan Budget	Complementary Extra-Budgetary Resources				-
1	Upgradation of TDSAT Reference Library	Purchase of books and other related materials to strengthen the Library		0.10		-			-
2	Study tour for Familiarisation with the telecom regulatory Environment and Settlement of disputes / Training	Countries to be visited by the Hon'ble Chairperson & Members will be decided in the first quarter and thereafter study tours will be undertaken accordingly. Training programme for officers will be identified.		0.90		-			Since the itinerary depends on the action taken in the first quarter, targets have to be fixed accordingly for the next three quarters.
3	Holding of Seminars on Telecom Disputes & Settlement.	Places of seminars will be identified in various states of the country in the first quarter and thereafter action will be taken accordingly		0.10		-			Action taken would depend on the identification of places in the first quarter, targets have to be fixed accordingly for the next three quarters.
			Total	**1.10**					

Annexure –H
Ref:2.8

BHARAT SANCHAR NIGAM LIMITED
Outcome Budget 2016-17

(Rs in crore)

S. No.	Name of Scheme / Programme	Objective / Outcome	Quantifiable Deliverables ** (Physical Target)	Annual Plan 2016-17 (Rs. in Crores)	Process/ Timelines	Remarks
1	2	3	4	5	6	8
1	Mobile	Addition in GSM capacity	148	2921.75		
		Addition in GSM Mobile connections	118 lakh		With in year 2016-17	
2	Wireline	Replacement of legacy wireline exchanges by Next Generation network (NGN)	20 lakh	1739.24	With in year 2016-17	
3	Broadband	To provide broadband connections (Wireline + Wireless)	10 lakh	631.93		
4	OFC	Laying & commisioning of OFC to provide transmission network for new exchange & Mobile equipment and provide bandwidth for core network.	15000 RKMs	1354.82	With in year 2016-17	
5	Others *			669.26		

Note:-1.* Others includes funds requirement of IT, USO, Civil, Elect, TF, Ancilliary units etc.

2. **the physical targets have been taken as per the mid-term appraisal of the 12 th five year plan for the year 2016-17. The physical targets will be as per the MOU 2016-17 to be submitted to DPE. The same shall be finalized after discussion with the Task Force, constituted by DPE.

Annexure – I
Ref:2.9

MAHANAGAR TELEPHONE NIGAM LIMITED
Outcome Budget 2016-17 (Rs in Crore)

S.No	Name of the Scheme/programme	Objective/ Outcome	Outlay 2016-17			Quantifiable Deliverables / Physical Output	Projected Outcome	Processes / Timelines	Remarks / Risk factors
1	2	3	4			5	6	7	8
			4(i)	4(ii)	4(iii)				
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources				
1	Net new connections including landline,Cellular and broadband connections (in K) *	Increase in Net new customers	-	-	-	400K	-	With in year 2016-17	
2	New Switching Capacity addition including capacity for GSM, NGN ,IMS (in K)	Increase in Net Switching Capacity	_	**584.87**	_	Addition of 450K lines in network	Expansion of 2G / 3G GSM network	With in year 2016-17	Delay in supplies by supplier , AT problem in site acquisition and finalization of tender/

									orders. Delay in permission for digging/laying of ducts for cables.
3	Deployment of DSLAM / FTTH (in K)	Increase in broadband and FTTH ports				Addition of 68K ports	**Increase in broadband and FTTH capacity**	-	
4	Optical Fibre Cable (in K Fiber Km)	Laying Of Optical Fiber				Laying of 30K fiber	**Expansion of Fiber network**	-	
5	IT related services	IT related Projects	**_**	**32.67**	**_**	Completion of various IT related projects	**Completion of various IT related projects**	-	
6	Expansion in New Services Areas abroad and National acquisitions	Service in Overseas Operations	**_**	**1.00**	**_**	_	**_**	Subject to new overseas suitable opportunities	
	Total			**618.54**					
* Net new connection targets will not includes the disconnected dormant GSM subscribers (subscribers inactive for more than one year).									

Annexure - J
Ref;2.10

ITI LIMITED
Outcome Budget 2016-17

Rs. in Crores

Sl.No	Products	Target plan (with ED & Service Tax)
1	**SWITCHING** (NGN,SSTP,MLLN, C-DoT, etc.)	**240**
2	**WIRELESS** (GSM Equipment, etc.)	**128**
3	**SERVICES** (NPR Data collections,Data Centre, AMC Business , Ros & IT, NSU, GSM Franchise, NFS Cable laying, NOFN, etc.)	**1140**
4	**MISC. & OTHERS** (NPR/MNID Smart SIM, USIM, SMPS, Banking Products, Cont.Mfg., Tablet PC, NFS Equip, Defence Prod., CIL Phone, Solar Penel, LED base prod. etc.)	**292**
	TOTAL	**1800**

Sl.no	Name of the Scheme/Programme	Objective/Outcome	Outlay 2016-17			Quantifiable Deliverables / Physical outputs*	Projected Outcome	Process/ timelines	Remarks
1	2	3	4			5		6	7
			4(i)	4(ii)	4(iii)				
			Non-Plan budget	Plan budget	Complementary Extra budgetary resources				
A	New Schemes								
1	OFC cable Manufacturing	Establishment of manufacturing infrastructure to manufacture OFC cable		48.00				2nd quarter	
2.	HDPE pipes manufacturing	Establishment of manufacturing infrastructure to manufacture HDPE pipes		11.00				1st Quarter	
3	Lithium-Ion batteries	Establishment of manufacturing infrastructure to manufacture Li-Ion batteries		12.00				2nd quarter	
4.	NGN Manufacturing	Establishment of manufacturing infrastructure to manufacture NGN equipments		7.00				1st quarter	
A	**Total New Schemes**			**78.00**					
B	**Continuing Scheme**	Provision for repairs / replacement of existing machinery & equipments and maintenance of various Plants / Units of ITI.		**2.00**				2nd quarter	
	Grand Total (A+B)			**80.00**					
* Turnover targeted for the year 2016-17 is Rs.1800.00 Crores.									

Annexure - K
Ref:2.11

DoT Schemes
Outcome Budget 2016-17
NATIONAL INSTITUTE OF COMMUNICATION FINANCE
ALT CENTRE, GHAZIABAD-201 002 [U.P.]

(Rs in Crore)

S. No.	Name of Schemes/ Programmes	Objective/ Outcome	OUTLAY 2016-17			Quantifiable Deliverables/ Physical Outputs	Projected Outcomes	Processes/ Timelines	Remarks/ Risk Factors
			4						
			4(i)	4(ii)	4(iii)				
1	2	3	Non-Plan Budget	Plan Budget (Amount in crores)	Complementary Extra-Budgetary Resources	5	6	7	8
1	i) Mid Career Training	Five stage Training programmes for IP&TAFS offices	--	6.5	--	NICF proposes to conduct MCT-I and MCT-II for the officers of IP&TAFS during 2016-17. This will aim at developing right skills, knowledge and attitude at various stages of their career.		FY 2016-17	Subject to the approval of Competent Authority
2	ii) Induction & In-service Course	Induction training of Gr.A, Gr.B and Gr.C officers and regular Inservice courses as per schedule and on relevant issues.	--	2.5	--	IP&TAFS Gr.A Probationers would be trained. Gr.B and Gr.C officers induction Training.		FY 2016-17	Subject to the approval of Competent Authority
3	iii) Institutional & Capacity Development Schemes & Initiatives	To develop an Institutional framework, Knowledge Bank, e-Governance, International Relation etc for the benefit of Institute and ultimately organisation as a whole.	--	1.0	--	Development of web based knowledge management portal, International Co-operation and training in the field of communications etc.		FY 2016-17	Subject to the approval of Competent Authority
2	PHYSICAL INFRASTRUCTURE FOR NICF	Building of NICF Campus at Ghitorni, New Delhi	--	17.00	--	Necessary approvals from Local Bodies for construction of campus for NICF are likely to be received within the first quarter of FY 2016-17. Construction is likely to start in the month of Oct-Nov 2016.		FY 2016-17	Subject to the approval of Layout Plan from SDMC.

CHAPTER – III

Reform measures and Policy initiatives

3.1 Introduction

Indian Telecommunication sector has undergone a major process of transformation through significant policy reforms, particularly beginning with the announcement of NTP 1994. The major thrust of NTP 1994 was on universal service and qualitative improvement in telecom services and also, opening of private sector participation in basic telephone services. An independent statutory regulator was established in 1997. The most important landmark in telecom reforms, however, came with the New Telecom Policy 1999 (NTP-99). Rather than insisting on the prior fulfilment of its revenue obligations, NTP-99 allowed service providers to "migrate" from fixed license fee regime to a revenue sharing regime. Recognizing that broadband services can contribute significantly in the growth of national economy, Department of Telecom, announced Broad policy 2004 in October, 2004.

3.2 National Telecom Policy 2012

- National Telecom Policy-2012 (NTP-2012), approved by Union Cabinet on 31st May 2012, addresses the Vision, Strategic direction and the various Medium term and Long term issues related to Telecom sector.
- The primary objective of NTP-2012 is maximizing public good by making available affordable, reliable and secure telecommunication and broadband services across the entire country. The main thrust of the Policy is on the multiplier effect and transformational impact of such services on the overall economy. It recognizes the role of such services in furthering the national development agenda while enhancing equity and inclusiveness. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the National Telecom Policy – 2012. NTP-2012 also recognizes the predominant role of the private sector in this field and the consequent policy imperative of ensuring continued viability of service providers in a competitive environment. Pursuant to NTP-2012, these principles would guide decisions needed to strike a balance between the interests of users/ consumers, service providers and government revenue.

Salient features of the policy

LICENSING, CONVERGENCE AND VALUE ADDED SERVICES

- Strive to create ***One Nation - One License*** across services and service areas.
- Achieve ***One Nation - Full Mobile Number Portability*** and work towards ***One Nation - Free Roaming***.
- To orient, review and harmonise the legal, regulatory and licensing framework in a time bound manner to enable seamless delivery of converged services in technology neutral environment. Convergence would cover:
    - Convergence of services i.e. convergence of voice, data, video, Internet telephony (VoIP), value added services and broadcasting services
    - Convergence of networks i.e. convergence of access network, carriage network (NLD/ ILD) and broadcast network
    - Convergence of devices i.e. telephone, Personal Computer, Television, Radio, set top boxes and other connected devices.

- To ***move towards Unified Licence regime*** in order to exploit the attendant benefits of convergence, spectrum liberalisation and facilitate ***delinking of the licensing of Networks from the delivery of Services to the end users*** in order to enable operators to optimally and efficiently utilise their networks and spectrum by sharing active and passive infrastructure. This will enhance the quality of service, optimize investments and help address the issue of the digital divide. This new licensing regime will address the requirements of level playing field, rollout obligations, policy on merger & acquisition, non-discriminatory interconnection including interconnection at IP level etc. while ensuring adequate competition.
- Put in place a simplified Merger & Acquisition regime in telecom service sector while ensuring adequate competition.
- To ***facilitate resale at the service level*** under the proposed licensing regime – both wholesale and retail, for example, by introduction of virtual operators – in tune with the need for robust competition at consumer end while ensuring due compliance with security and other license related obligations.
- To ***delink spectrum in respect of all future licences***. Spectrum shall be made available at a price determined through market related processes.
- To ***frame appropriate Policies*** for new licensing framework, migration of existing licensees to new framework, exit policy, measures for ensuring adequate competition etc. in consultation with TRAI.
- To facilitate ***convergence of local cable TV networks*** post digitalisation.
- To put in place an appropriate regulatory framework for delivery of ***VAS at affordable price*** so as to fuel growth in entrepreneurship, innovation and provision of ***region specific content in regional languages***.

- To put in place a framework ***to regulate the carriage charges, which are content neutral and based on the bandwidth utilisation***. This will also encourage non value added services such as provision of data and information over the mobile platform.
- ***Reposition the mobile phone*** from a mere communication device ***to an instrument of empowerment*** that combines communication with proof of identity, fully secure financial and other transaction capability, multi-lingual services and a whole range of other capabilities that ride on them and transcend the literacy barrier.

SPECTRUM MANAGEMENT

- Ensure adequate availability of spectrum and its allocation in a transparent manner through market related processes. ***Make available additional 300 MHz spectrum for IMT services by the year 2017 and another 200 MHz by 2020.***
- To move at the earliest towards liberalisation of spectrum to enable use of spectrum in any band to provide any service in any technology as well as to permit ***spectrum pooling, sharing and later, trading*** to enable optimal utilisation of spectrum through appropriate regulatory framework..
- To undertake ***periodic audit*** of spectrum utilisation to ensure its efficient use.
- To refarm spectrum and allot alternative frequency bands or media to service providers from time to time to make spectrum available for introduction of new technologies for telecom applications.
- To ***prepare a roadmap*** for availability of additional spectrum every 5 years.

BROADBAND AND RURAL TELEPHONY

- ***Increase rural teledensity from the current level of around 39 to 70 by the year 2017 and 100 by the year 2020.***
- To recognise telecom, including broadband connectivity as a basic necessity like education and health and work towards **'Right to Broadband'.**
- *Provide affordable and reliable* ***broadband-on-demand by the year 2015*** *and* ***to achieve 175 million broadband connections by the year 2017 and 600 million by the year 2020 at minimum 2 Mbps download speed and making available higher speeds of at least 100 Mbps on demand.***
- ***Provide high speed and high quality broadband access to all village panchayats through a combination of technologies by the year 2014 and*** progressively to all villages and habitations by 2020.

R&D, MANUFACTURING AND STANDARDIZATION OF TELECOMMUNICATION EQUIPMENT

- Promote the ecosystem for design, Research and Development, IPR creation, testing, standardization and manufacturing i.e. complete value chain for domestic production of telecommunication equipment to ***meet Indian telecom sector demand to the extent of 60% and 80% with a minimum value addition of 45% and 65% by the year 2017 and 2020 respectively***
- ***Create a corpus to promote indigenous R&D, IPR creation, entrepreneurship, manufacturing, commercialisation and deployment of state-of-the-art telecom products and services during the 12th five year plan period.***
- To promote ***setting up of Telecommunications Standard Development Organisation (TSDO)*** as an autonomous body with effective participation of the government, industry, R&D centres, service providers, and academia to drive consensus regarding standards to meet national requirements including security needs. It will facilitate access for all the stakeholders in the International Standards Development Organisations and act as an advisory body for preparation of national contributions for incorporation of Indian requirement/IPRs/standards in the international standards.
- ***Provide preferen***ce to domestically manufactured telecommunication products, in procurement of those telecommunication products which have security implications for the country and in Government procurement for its own use, consistent with our World Trade Organization (WTO) commitments.

TELECOM INFRASTRUCTURE/ ROW ISSUES, GREEN TELECOM, CLEAR SKYLINE, MITIGATION EFFORTS DURING DISASTERS AND EMERGENCIES

- To work towards ***recognition of telecom as Infrastructure Sector for both wireline and wireless*** and extension of the benefits available to infrastructure sectors to telecom sector also, to realize true potential of ICT for development.
- To facilitate increased use of alternative sources (Renewable Energy Technologies) of energy for powering telecom networks through active participation of all the stakeholders – the government, the telecom industry and the consumer for green telecommunications. Sector specific schemes and targets for promotion of green technologies will be finalised in consultation with Ministry of New and Renewable Energy (MNRE) and other stakeholders.

QUALITY OF SERVICE AND PROTECTION OF CONSUMER INTEREST

- To strengthen the regulator for ensuring compliance of the prescribed performance standards and Quality of Service (QoS) parameters by the Telecom Service Providers
- To formulate a ***Code of Practice for Sales and Marketing Communications*** to improve transparency as well as address security issues relating to Customer Acquisition

- To ***undertake legislative measures*** to bring disputes between telecom consumers and service providers ***within the jurisdiction of Consumer Forums*** established under Consumer Protection Act.

SECURITY

- To create an institutional framework through regulatory measures to ensure that ***safe-to-connect*** devices are inducted into the Telecom Network and service providers take measures for ensuring the security of the network..
- To ensure security in an increasingly insecure cyber space, indigenously manufactured multi-functional SIM cards with indigenously designed chips incorporating specific laid down standards are considered critical. The whole electronics eco-system for this and other purposes, starting from the wafer fab needs to be built and hence is viewed as a key policy objective and outcome.

SKILL DEVELOPMENT AND PUBLIC SECTOR

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

CLOUD SERVICES

- To recognise that cloud computing will significantly speed up design and roll out of services, enable social networking and participative governance and e-Commerce on a scale which was not possible with traditional technology solutions.
- To take new policy initiatives to ensure rapid expansion of new services and technologies at globally competitive prices by addressing the concerns of cloud users and other stakeholders including specific steps that need to be taken for lowering the cost of service delivery.

TELECOM ENTERPRISE SERVICES, DATA USE NEW TECHNOLOGIES AND IPV 6 COMPLIANT NETWORKS

- To facilitate the role of new technologies in furthering public welfare and enhanced customer choices through affordable access and efficient service delivery. The emergence of new service formats such as ***Machine-to-Machine (M2M) communications*** (e.g. remotely operated irrigation pumps, smart grid etc.) represent tremendous opportunities, especially as their roll-out becomes more widespread.

- To recognize the importance of the new Internet Protocol IPv6 to start offering new IP based services on the new protocol and to encourage new and innovative IPv6 based applications in different sectors of the economy by enabling participatory approach of all stake holders.

FINANCING OF TELECOM SECTOR

- To create a ***Telecom Finance Corporation*** as a vehicle to mobilize and channelize financing for telecom projects in order to facilitate investment in the telecom sector.
- To ***rationalize taxes, duties and levies affecting the sector and work towards providing a stable fiscal regime*** to stimulate investments and making services more affordable.

ROLE OF REGULATOR, CHANGES IN LEGISLATION

- To review the TRAI Act with a view to addressing regulatory inadequacies/ impediments in effective discharge of its functions.
- To undertake a comprehensive review of Indian Telegraph Act and its rules and other allied legislations with a view to making them consistent with and in furtherance of the above policy objectives.

OPERATIONALISATION OF THE POLICY

- To take suitable facilitatory measures to encourage existing service providers to rapidly migrate to the new regime in a uniformly liberalised environment with a level playing field.
- Policy will be operationalized by bringing out detailed guidelines, as may be considered appropriate, from time to time.

3.3 **Unified Licence**

Unified Licence for Telecommunications services permitting Licensee to provide all telecommunication / telegraph services covering various geographical areas using any technology was envisaged by the Government in November 2003. The Unified Licence (UL) regime for same has been operatinalised in August 2013. With UL regime in place, all new licences are granted only in UL regime. “

3.4 Thrust areas of the Department under 12th Five Year Plan

The Twelfth Plan Programmes for the telecom sector are guided by the NTP-2012. The thrust of NTP 2012 is on raising the competitiveness of Indian telecom sector, to make it a world leader, while at the same time making available a variety of services on a single platform utilising the technological advancements taking place in the sector. Spectrum, which is an important input has been a limited and reusable resource. With the introduction of new technologies, high bandwidth applications and increasing user base, there will be a requirement of significant amount of additional spectrum.

3.4.1 Twelfth Plan Targets

- Provision of 1200 million connections by 2017
- Mobile access to all villages and increase rural teledensity to 70 per cent by 2017
- Broadband connection of 175 million by 2017
- Commissioning of National Optical Fibre Network (NOFN)
- Make available additional 300 MHz of spectrum for IMT services
- Making India a hub for telecom equipment manufacturing by incentivising domestic manufacturers with thrust on IPR, product development and commercialisation
- Provide preferential market access for indigenously manufactured products
- To increase domestic manufactured products in telecom network to the extent of 60 per cent with value addition of 45 per cent by 2017
- Adoption of green policy in Telecom and incentivise use of renewable energy sources

3.4.2 Research & Development

International Cooperation Division With a view to promote R&D, IPR, Standardisation, Product development and manufacturing of telecom equipment and services including their exports, Government have facilitated setting up of following societies :

- Telecom Centres of Excellence, (TCOE) India in Public Private Partnership mode for R&D, IPR generation including product development
- Telecommunications Standards Development Society, India (TSDSI) for standardisation
- Telecom Equipment and Services Export Promotion Council (TEPC) for facilitating export of telecom equipments and services

The actual performance in 2014-15 was Rs.50 lakh and the Performance in the first 9 maonths from April 2015 to December 2015 is Rs.55,97,995/-. The target performances during 2016-17 is as under:-

(Rs. in Lakhs)

Sl. No.	Organisation	Projected budget for 2016-17
1	Telecom Centres of Excellence, (TCOE) India	2150
2.	Telecommunications Standards Development Society, India (TSDSI)	125
3	Telecom Equipment and Services Export Promotion Council (TEPC)	100
4	Exihibitions/Conference	50
5	Total	2425

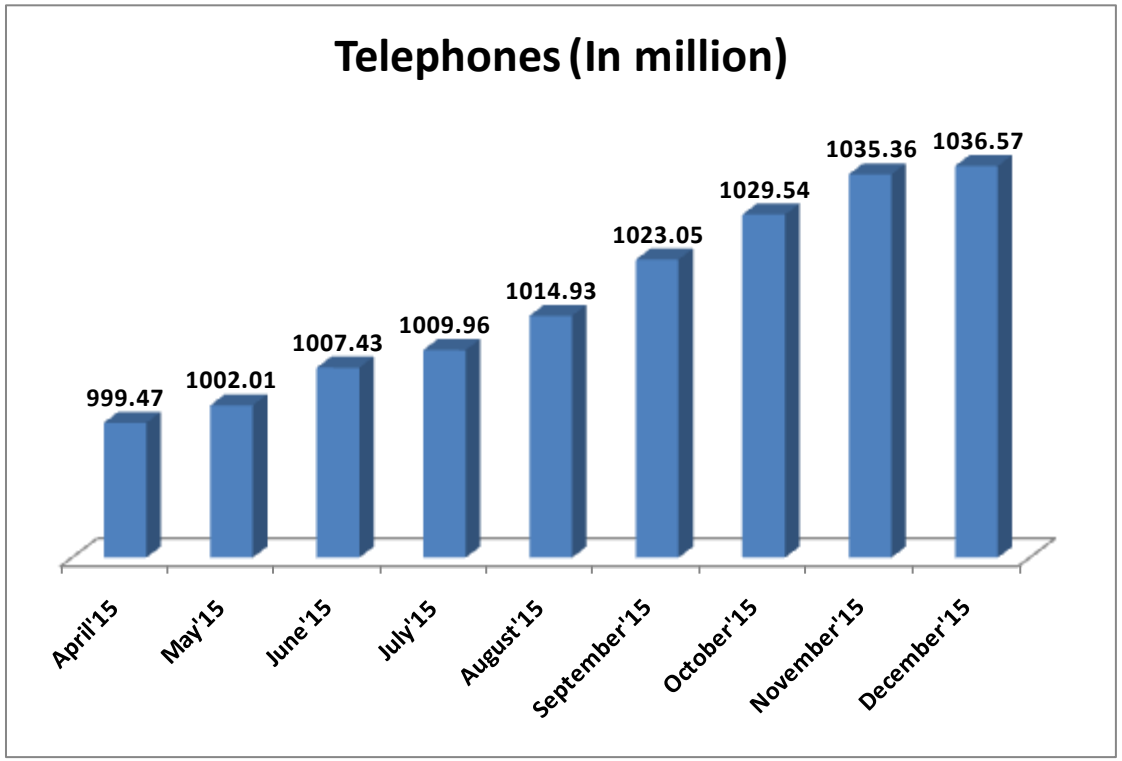
Chapter – IV

Review of Performance

A. Department of Telecommunication

4.1 Overview of the Telecom Sector

The Indian telecom sector has registered a phenomenal growth during the past few years and has become the second largest telephone network in the world, next only to China. A series of reform measures by the Government, technological innovations in wireless technology and active participation by private sector played an important role in the exponential growth of telecom sector in the country.



4.1.1 Network Expansion

The number of telephones, which were 996.13 million at the beginning of the current financial year, has increased to 1036.57 million by the end of December 2015. The graph above indicates the number of telephone connections at the end of each month during the year 2015-16.

The number of rural telephone has increased from 416.08 million to 434.23 million during the period March 2015 to December 2015. The urban telephones also increased from 580.05 million to 602.34 million during the same period.

4.1.2 Teledensity

Tele-density, which shows the number of telephones per 100 population, is an important indicator of telecom penetration in the country. Tele-density, which was 79.36 per cent at the beginning of the financial year 2015-16, increased to 81.85 per cent by the end of December 2015. There has been improvement in the rural tele-density during 2015-16 and it increased from 48.04 per cent at the beginning of the financial year to 49.82 per cent at the end of December, 2015. However, the urban tele-density increased from 149.04 per cent to 152.57 per cent during this period. The month-wise tele-density from April, 2015 to December, 2015 is shown below:

Teledensity (%age)			
At the end of	**Rural**	**Urban**	**Overall**
April'15	48.48	148.60	**79.54**
May'15	48.66	148.55	**79.67**
June'15	48.78	149.34	**80.02**
July'15	48.53	150.24	**80.14**
August'15	48.77	150.65	**80.45**
September'15	48.79	152.36	**81.02**
October'15	49.24	152.70	**81.45**
November'15	49.90	152.39	**81.83**
December'15	49.82	152.57	**81.85**

Among the Service areas, Himachal Pradesh (124.54%) has the highest tele-density followed by Tamil Nadu (117.27%), Punjab (104.15%), Karnataka (102.33%) and Kerala (100.52%). On the other hand, the service areas such as Bihar (52.55%), Assam (55.22%), West Bengal (61.40%), Madhya Pradesh (63.07%) and Uttar Pradesh (63.51%) have comparatively low

tele-density. Among the three metros, Delhi Service Area tops in tele-density with 240.93% tele-density, followed by Kolkata (160.30%) and Mumbai (1%).

4.1.3 Composition of Telephones

A. Public vs. Private

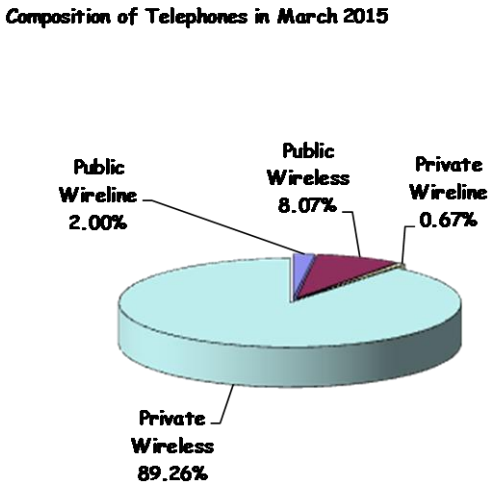
An analysis of operator-wise number of telephones reveals that PSUs (BSNL & MTNL) still have a large share of nearly 73.09 per cent in the wire line segment by the end of December 2015. Private operators, on the other hand, have 91.47 per cent share in the wireless segment. Overall, Bharti Group with 24.06 per cent has the largest share followed by Vodafone Group (19.15 per cent), Idea (17.00 per cent), Reliance (9.98 per cent) and PSUs (8.53 per cent).

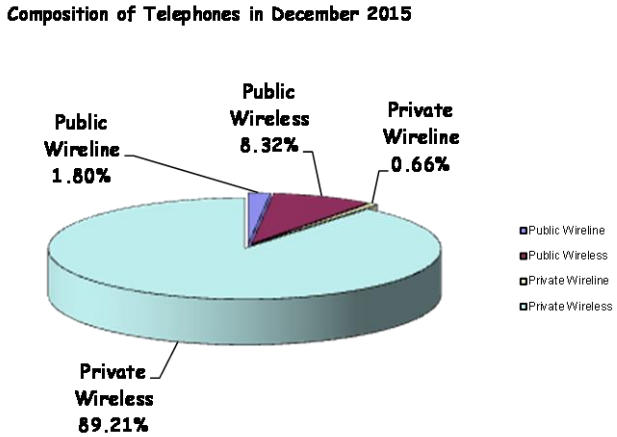
The share of private sector, in terms of number of subscribers, decreased from 89.93% to 89.88% during the period from March, 2015 to December, 2015. On the other hand, the share of public sector increased from 10.07 per cent to 10.12 per cent during this period.

B. Wire line vs. Wireless

As far as the technology is concerned, the preference for use of wireless telephony continues. The share of wireless telephones increased from 97.33 per cent at the beginning of the financial year to 97.54 per cent by the end of December, 2015. On the other hand, the share of wire line telephones declined marginally from 2.67 per cent to 2.46 per cent during the same period.

The graphical representation of the compositional changes in the telecom sector is shown in the following pie charts:





The following table shows the performance of telecom sector at the end of March 2015 and December 2015.

Items	Units	At the end of March	
		March, 2015	December, 2015
Total telephones	(In million)	**996.13**	**1036.57**
Landline telephones		26.59	25.52
Wireless telephones		969.54	1011.05
Rural telephones		**416.08**	**434.23**
Urban telephones		580.05	602.34
Telephones of Private Sector		**895.79**	**931.64**
(In million & %age Share)	**(%age Share)**	**89.93%**	**89.88%**
Telephones of Public Sector	**(In million)**	100.34	104.93
(In million & %age Share)	**(%age Share)**	10.07%	10.12%
Rural tele-density	(%age)	**48.04**	**49.82**
Urban tele-density		149.04	152.57
Overall tele-density		**79.36**	**81.85**

4.1.4 Internet and Broadband Services

As per guidelines for grant of Unified License dated 19.08.2013, the internet services have been included in the Unified License. Accordingly, with effect from 19.08.2013, Unified License with ISP authorization is granted for provision of internet services.

As on 31.12.2015, there are 323 authorized Licensees for Internet Services which include 82 Category "A" Licensees, 135 Category "B" Licensees and 106 Category "C" Licensees.

Further, as on 31.12.2015, 313 Unified Licenses have been issued with ISP authorization. This includes 21 Category 'A' ISP authorizations, 144 Category 'B' ISP authorizations and 148 Category 'C' ISP authorizations.

As on 30th September 2015, there were about 324.95 million internet subscribers including 120.88 million Broadband subscribers.

(*The subscriber figures are as per TRAI performance Indicator Report for the Quarter ended in September 2015)*

4.1.5 Very Small Aperture Terminal (VSAT) Services

VSAT service licenses are granted on non exclusive basis for Very Small Aperture Terminal (VSAT) services using INSAT satellite system within the territorial boundaries of India. Under the VSAT license, the licensees provide data connectivity within CUG between various sites scattered throughout India using VSATs and central hub. There are two categories of VSAT licenses:

(i) Captive CUG VSAT license wherein the licensee company can set up VSAT network for its internal use only. As on 31st December, 2015 there are 28 captive CUG VSAT networks.

(ii) VSAT CUG service authorization under Unified Licence wherein the licensee company can provide VSAT CUG service to a number of CUGs on Commercial basis. As on 31st December, 2015 there are 11 licenses for providing commercial VSAT services.

DoT also issues permissions for Captive Networks to organizations wherein the permission holder can setup a captive network for its internal use. As on date, 4 such permissions are in force.

4.1.6 Telecom Equipment Manufacturing

With the advent of next-generation technologies and operators looking to roll out 3G and broadband wireless access services, the demand for telecom equipment has increased rapidly. In an attempt to capitalize on this opportunity, the government and policy makers are focusing on developing the domestic manufacturing industry.

With a view to increase domestic telecom equipment manufacturing industry and making India a manufacturing hub, the National Telecom Policy-2012 (NTP 2012), inter-alia, has following objectives to promote R&D, Manufacturing and Standardization of Telecommunication Equipment:

- Promote innovation, indigenous R&D and manufacturing to serve domestic and global markets, by increasing skills and competencies.
- Create a corpus to promote indigenous R&D, IPR creation, entrepreneurship, manufacturing, commercialisation and deployment of state-of-the-art telecom products and services during the 12th five year plan period.
- Promote the ecosystem for design, Research and Development, IPR creation, testing, standardization and manufacturing i.e. complete value chain for domestic production of telecommunication equipment to meet Indian telecom sector demand to the extent of 60% and 80% with a minimum value addition of 45% and 65% by the year 2017 and 2020 respectively.

- Provide preference to domestically manufactured telecommunication products, in procurement of those telecommunication products which have security implications for the country and in Government procurement for its own use, consistent with our World Trade Organization (WTO) commitments.
- The Government has taken a number of initiatives for promoting the domestic manufacturing ecosystem in the country with Electronic Manufacturing Cluster Scheme, Modified Special Incentive Scheme and preference to domestically manufactured telecom equipment in Government procurement.

The Government has laid down the Policy for providing preference to domestically manufactured electronic products (including telecom equipment) in Government procurement. In furtherance of the above notified policy, Department of Telecommunications has notified telecom products to be procured by Government vide notification No. 18-07/2012-IP dated 5th October 2012. The notification provides 50% to 100% preferential market access for domestically manufactured telecom equipment with minimum value addition of 25% to 65%.

4.2 International Relations

The year 2015-16 was marked with several important activities and visits in the sphere of International Relations for DoT.

There were significant activities in multilateral cooperation with Intergovernmental Organizations such as ITU, APT, and ITSO etc. Indian high level delegations visited foreign countries in strengthening the bilateral relations and technological cooperation and several foreign dignitaries also visited India reflecting the growing prominence of India. The activities on International Relations front have been characterized as below:

1. **Activities on Bilateral Cooperation**
2. **Activities on Multilateral Cooperation and Conferences of Intergovernmental and International Organizations**
3. **International Exhibitions and Promotion events**
4. Capacity building programs with ITU/ APT and ITU-T study group meetings

4.2.1. Bilateral Cooperation

I. Indian Delegations' visits abroad

1. **Germany:** A high level delegation, led by Secretary (T), visited Germany during April 13-17, 2015 for Seminar on Digital India to have active engagement with Germany in various areas in the field of Telecommunications/ ICT.
2. **Israel:** A high level delegation, led by Secretary (T), visited Israel during September 7-9, 2015 and it is envisaged to lead to active engagement with Israel in various areas in the field of Telecommunications/ ICT. It is apt to mention that India and Israel have a signed a MoU way back in 1994. The case of creation of a JWG with Israel has been approved to take forward the cooperation. Security, innovation and start-ups are some of the important areas of cooperation. Apart from high level meetings, the Secretary (T) also addressed the Israel industry on opportunities in India
3. **Japan**: Third Meeting of India-Japan Joint Working Group, under India-Japan ICT Comprehensive Cooperation Framework, was held in Tokyo, Japan on 04.11.2015. Indian delegation was led by Member (T). In addition to the existing five projects identified under the Framework, following proposals were presented, during the third meeting of the JWG, as part of future cooperation:
   1. Intelligent Transport System
   2. Automatic Tracking System
   3. Co-operation in postal Sector
   4. Weather Radar solutions

   DoT has sent these project proposals to the concerned Ministries/ Departments for input so that an appropriate action may be initiated to take up these projects under the ambit of JWG.

II. Foreign delegations' visits to India

1. **Mauritius:** Under the Chairmanship of Secretary (T) and in the presence of Member (S), a meeting of the officers of Security wing and IR cell of DoT with a delegation of the Republic of Mauritius was held on 13.10.2015. Subsequently, it was decided to depute a delegation, consisting of officers from DoT and C-DoT, to Mauritius. The delegation will work for preparation of draft legal framework for lawful interception/ monitoring and the architecture of technical solution for the same as per request of Mauritius.

2. **Sweden:** A Swedish delegation, led by H.E. Mr. Mehmet Kaplan, Hon'ble Minister for Housing, Urban Development and IT, Sweden, met Hon'ble MoC&IT on 15.10.2015 followed by a technical bilateral meeting between the officers of the two countries, in which a number of areas of possible cooperation were discussed. It was envisaged to create a structural mechanism, such as JWG, in order to carry forward the cooperation. The areas identified for cooperation include security of telecom & information infrastructure, capacity building in telecom, migration from IPv4 to IPv6, R&D in telecom & electronic equipment/ services, manufacturing of ICT products, e-gov applications, regulatory practices, spectrum management, etc.
3. **USA:** A delegation of Information Technology Industry Council (ITI), USA met Secretary (T) on 02.12.2015. ITI is a premier advocacy and policy organization for the world's leading innovation companies with a mission to promote the global competitiveness of its member companies through tech friendly public policy. Ten of its member companies are among the world's 50 largest corporations. During the meeting, IR Cell delivered a presentation on 'Investment Opportunities in Indian Digital/ Telecom Sector'.
4. **Japan:** (1) A delegation of Japan Association of New Economy (JANE) met Hon'ble MoC&IT on 03.12.2015. JANE is an industrial association with 546 member companies which mainly deal in internet business. JANE's objective is to promote new industry through expanded e-business and increased use of IT to enhance Japan's global competitiveness.
   (2) A delegation of NTT Communications, Japan met Secretary (T) on 11.12.2015. M/s NTT Communications has recently been granted Unified License (UL) with National Long Distance Service authorization.
5. **Saudi Arabia:** A Saudi Business delegation met Hon'ble MoC&IT on 15.12.2015. Summing up the proceedings, Hon'ble MoC&IT suggested for focusing on following three areas for further cooperation:
   (a) Human Resource Development
   (b) Transforming the IT profile of Saudi Arabia
   (c) Investment by Saudi companies in India in technology, machinery, oil, R&D etc.
6. **Spain:** A meeting was held on 30.01.2016, under the chairmanship of Additional Secretary (T), with a delegation led by Director General of Telecommunications, Government of Catalonia, Spain. The agenda of the meeting was to present the achievements of Catalonia in developing Smart Cities and to discuss how India and Catalonia may collaborate in creating Smart City Eco systems in India.

III. Other Activities

1. Department of Industrial Policy & Promotion (DIPP) had sought a shelf of investment projects/ proposals for UAE investment with a view to operationalize India-UAE Infrastructure Fund of US $ 75 Billion. Project proposals for the same

were sought from various wings/ units/ PSUs under DoT. Proposal of MTNL for investment of Rs. 1600 Crore as Capex was forwarded to DIPP. The proposal of BSNL for investment is under process for approval.

2. IR Cell held a meeting on 08.01.2016 at Sanchar Bhawan, New Delhi, with officers of DoT and DeitY, including representatives from WPC, TEC, TRAI, BSNL, MTNL, C-DoT, for formulation of prospective areas to be incorporated in the proposed JWGs with Sweden and Israel.
3. A list of potential areas of co-operation to promote 'Telecom/ IT Equipment & Services', submitted by C-DOT, a list of Projects/ DPRs submitted by TCIL and a rural telephony project based on World GSM Technology Solution offered by M/s Vihaan Networks Limited (VNL) were submitted to Department of Commerce for inclusion in the agenda for 4th India-Africa Trade Ministers' Meeting held on 21.10.2015 at New Delhi.
4. Third India-Africa Forum Summit (IAFS-III) was held in New Delhi during October 26-30, 2015. 'Pan-African e-Network Project', being implemented by TCIL, has been adopted by IAFS since its inception in 2008. Pan African e-Network Project provides tele-education, tele-medicine services and VVIP connectivity in 48 African countries. This Project is being hailed as a successful initiative and has become a role model project for other partners in Africa. IR Cell reviewed the status of implementation of the Project and its proposed extension by the MEA for the period 2016-2021. The concerns of DoT/ TCIL were conveyed to MEA. During IAFS-III, MEA extended the tenure and fund allocations of this project.
5. International Centre for Settlement of Investment Dispute (ICSID) provides institutional support through World Bank system. By joining ICSID, India conveys a global message regarding creation of sound grounds for investors. The same will also serve India's defensive interests in arbitration cases. Membership of ICSID is open to India as a member of the World Bank and expected to be more cost efficient as compared to other arbitration systems. ICSID offers the possibility of constant monitoring of disputes through India's Executive Director to the World Bank. DoT's support to proposal of India joining ICSID was conveyed to Ministry of Finance.
6. **Dividend Payment from M/s Intersputnik:**

M/s Intersputnik made a payment of the dividends due to the DoT for 2010-2013 in the amount of 21,128.09 USD into the account of the Indian Embassy in Moscow.

4.2.2 Multilateral Cooperation:

Foreign delegations' visits to India:-

i. Visit of Alexander NTOKO Chief, Operations and Planning Department, International Telecommunication Union:

The Department of Telecommunications organized a technical presentation from ITU on `Framework for Management of Digital Object Architecture (DOA)' on 6th of May, 2015 at DoT by Mr. Alexander Ntoko, Chief Operations and Planning Department, ITU HQ, Geneva. The Session was chaired by Secretary (T).

ii. Visit of Mr. Malcolm Johnson ITU Deputy Secretary General to India:

Mr. Malcolm Johnson made a courtesy visit to meet Shri Rakesh Garg, Secretary (Telecom) in his office and interacted with senior level officers from DoT and TEC in the Conference room, Sanchar Bhawan 26th October 2015. In the afternoon he visited IIT Delhi where he met Prof. Kshitij Gupta, IIT Director, visited several labs and interacted with students and faculty members of IIT-Delhi.

iii. Hosting of 2nd ITU Asia-Pacific Centers of Excellence Steering Committee Meeting, 28-29 January 2016, IIM – Bangalore

The 2nd ITU Asia Pacific Centres of Excellence (ASP CoE) Steering Committee Meeting was held in Indian Institute of Management, Bengaluru, India, on 28-29 January 2016. The Meeting was organized by the ITU and hosted by the Department of Telecommunications. Member (S) inaugurated the event. It was attended by delegates from ITU ASP COE Steering Committee Members, Bangladesh Telecom Regulatory Commission, State Radio Monitoring Center, China, China Academy of Information and Communication Technology and Ministry of Information and Communication Technology, Iran, Ministry of Information and Communication Technology Thailand, Ministry of Communication Multimedia Malaysia, National Broadcasting and Telecommunication Commission Thailand, Asia Pacific Telecommunity, Post and Telecom Institute Technology Vietnam, Ministry of Information and Communication Vietnam participated and several other industry members.

The delegates deliberated on strategic and operational issues of capacity building programmes, capacity building plan for 2016 and other aspects in building partnership and collaboration. The partnership session received proposals from IIM Bangalore, a few Indian Startups, Huawei, Cellular Operators Association of India (COAI) and Telecom Sector Skill Council, Pacific Island Telecom Association (PITA), TRAI, National Institute of Communication Finance, TCIL, etc.

Indian delegation's visit to Foreign:-

i. TDAG (Telecom Development Advisory Group): India is the Vice Chair of the ITU-D TDAG Bureau. DoT delegation participated in the meetings from 27-30 April, 2015 at Switzerland.

ii. 2015 Session of the ITU Council meeting: Indian delegation participated at Geneva, Switzerland from 11-22 May, 2015.

iii. World Summit on Information Society (WSIS) Forum: DoT delegation participated at ITU HQ Geneva in 25-29 May, 2015.

iv. Administrator (USOF) and CMD BBNL participated in FTTH Council APAC 2015 Annual conference as distinguished speaker at Jakarta, Indonesia in 19-21 May 2015..

v. DoT delegation participated in 'BRICS Cooperation in ensuring security in use of ICT' meeting, at Moscow, Russia in 16-18 June 2015.

vi. DoT, TEC delegation participated in the Telecommunication Standardization Advisory Group (TSAG) meeting at Geneva, Switzerland in 02-05 June, 2015

vii. 12th Asia-Pacific Telecommunication and ICT Development Forum (ADF-12): Member (S) participated at Macao, Hongkong from 22-24 September, 2015. Shri N.K. Yadav, Member (S) has been elected as the Chairman of the APT IDF during the meeting at Macao.

viii. ITU Council Working Group: A delegation led by DDG (IR) participated at Geneva, Switzerland from 28th September to 09th October, 2015.

ix. Additional Secretary (T), DOT as a Member of composite Indian delegation participated in the 10th meeting of the Regional comprehensive Economic Partnership Trade Negotiating Committee and related meetings at Bussan, South Korea from 13-16 October, 2015.

x. 10th Annual meeting of the Internet Governance Forum and a high Level Event on the theme "An Agenda for Internet Governance Post-2015: DDG (IR) participated in the meeting at Joao Pessoa, Brazil from 09-13 November, 2015.

xi. 15th ASEAN Telecom Ministers (TELMIN) and 16th ASEAN Telecom Senior Officers Meeting: DDG (IR) led the Indian delegation in the meeting at Da Nang city, Vietnam from 23-27 November, 2015. A presentation was made to the ASEAN membership on possible areas of cooperation to strengthen the engagement with ASEAN.

4.2.3 Study Group meetings and workshops:

The ITU study group meetings are aimed to build capacity and contribute for harmonizing standards, share best practices and learning's for ICT growth. The issues discussed in these meetings are important for India as an emerging country to develop the ICT

eco system and take challenges and issues to this international discussion forum. The DoT delegation participated in the following ITU study meetings in different sectors.

i. ITU-T Study Group 20 meeting on IoT and its applications including smart cities and communities.
ii. ITU-T Study Group-12 (Performance, Quality of Service and Quality of Experience).
iii. ITU Regional Standardization Forum.
iv. 6th APT Cyber security Forum.
v. 2nd Meeting of the APT Preparatory Group for ITU World Telecommunication Standardization Assembly (WTSA).
vi. ITU-T Study Group 16 meeting on Multimedia coding, systems and applications.
vii. ITU-T Study Group 5 meeting on Environment and climate change.
viii. ITU-T Study Group 17 meeting on Security.
ix. ITU Workshop on Performance, QoS, and QoE of Emerging Networks and Services and ITU-T Study Group 12 meeting of Service Development Group.
x. 26th APT Standardization Programme Forum (ASTAP-26).
xi. ITU Asia Pacific Regional Forum on Accelerating Broadband Access.
xii. 15th APT Policy and Regulatory Forum.
xiii. ITU-D Study Group-1 Rapporteur Meeting.
xiv. 13th ITU World Telecommunication/ICT Indicators Symposium.

4.2.4 Trainings:

The DoT officers participated in the capacity building programme abroad organized by the International Organisation such as ITU, APT in the following area

i. Strengthening Disaster Preparedness in Asia-Pacific Region Utilizing ICT
ii. Utilization of ICT services & E-Application for Overcoming Digital Divide
iii. Information Security and Computer Communication
iv. 6th APT Workshop on Disaster Management / Communications (WDMC-6)
v. Mobile Telecommunications Technologies and Services
vi. Study on Cyber Security Information Sharing Initiatives in Japan and Furthering Mutual Collaboration among the Countries in Asia Pacific Region.

vii. Cyber Security Policies and Technologies for the Broadband Communications.

viii. Digital Divide Resolution at Rural Areas by Utilizing Television White Space.

ix. Radio Spectrum Management and Monitoring for Wireless Broadband Infrastructure

x. Practical Technologies and their Implementation of Small Scale Telecommunications for the Rural Area (with Technical Practice).

xi. Strengthening Disaster Preparedness in Asia-Pacific Region Utilizing ICT for Public Safety.

xii. Actions for Next Generation Mobile Communication Systems.

4.2.5 Events

Senior officers from DoT participated in the following important events abroad in the context of Investment Promotion, Opportunities in India, technology and Products.

I. Convergence Africa World 2015 at Nairobi, Kenya in 17-19 June 2015.
II. SVIAZ/ EXPOCOMM 2015 at Moscow, Russia in 12-15 May, 2015.
III. Showcasing the American Technological Experience at USA in 30 November2015 to 18 December2015.
IV. 18th Annual AfricaCom 2015 Event at Cape Town, South Africa in 17-19 November, 2015.
V. 35th Gulf Information Technology Exhibition (GITEX) at Dubai, UAE in 18-22 October, 2015.
VI. ITU Telecom World, 2015 at Budapest, Hungary in 12-15 October, 2015.
VII. Indo-Africa ICT Expo 2015 at Nairobi, Kenya in 28-29 September, 2015.
VIII. ISS World Africa Training conference and Expo at Johannesburg, South Africa in 27-29 July, 2015.
IX. CommunicAsia 2015 Summit at Singapore in 2-5 June, 2015.

4.3 Telecommunication Engineering Centre (TEC):

(i) TEC is responsible for standardization activities in India for telecom sector writing of specifications for all the telecom operators, accord Approval and Services test certificates etc. During the period from April 2014 to March 2015 about 14 GRs/ IRs were prepared, 23 GRs/IRs revised.

(ii) TEC is responsible for preparation of Test Schedule during the period April 2014 to March 2015; about 37 Test Schedules were prepared. The review of the performance for the year 2014-15 and for the year 2015-16 is placed at **Annexure-L**.

4.4 Wireless Planning and Co-ordination

The WPC Wing in the Department of Telecommunications deals with the spectrum management, wireless licensing, frequency assignments, international coordination for spectrum management and administration of Indian Telegraph Act (ITA) 1885, for radio communication systems and Indian Wireless Telegraphy Act (IWTA) 1933.

4.4.1 Spectrum Management

Spectrum Management is the combination of Administrative and technical procedures necessary to ensure the efficient operation of radio communication services. Spectrum Management is carried out in line with International Frequency Table of Radio Regulation of International Telecommunications Union (ITU), National Frequency Allocation Plan (NFAP) and also ensuring Electromagnetic Interference (EMI)/ Electromagnetic Compatibility(EMC). The details are given below.

- Cellular Mobile Service using CDMA technology uses frequencies in 800 MHz frequency band (869-889 MHz paired with 824-844 MHz).
- Cellular Mobile Service using GSM technology uses frequencies in 900 MHz frequency band (890-915 MHz paired with 935-960 MHz) and 1800 MHz band (1710-1785 paired with 1805 -1880 MHz).
- Mobile Services using WCDMA (3G) technology uses 2.1 GHz band (1920-1980 MHz paired with 2110-2170 MHz).
- BWA service uses frequencies in the frequency band 2.3 -2.4 GHz and 2.5 -2.69 GHz.
- Point to point fixed Microwave Access for these networks uses frequency bands 15/18/21/23 GHz as appropriate for establishing compatibility of electromagnetic radiation to ensure interference free operation of all such networks with other available networks.
- Backbone Microwave Access for these networks uses 6/7 GHz frequency bands.
- **One of the BWA service providers have launched pan India services.**
- Internet Service Provider (ISP) service uses frequency bands 2.7-2.9 GHz & 3.3-3.4 GHz, 10.15-10.65 GHz.

- Frequencies are also assigned for Captive usages to Govt, PSUs and Private Entities in different frequency bands.

4.4.2 AUCTION OF SPECTRUM

- Auction of spectrum in 800 MHz, 900 MHz, 1800 MHz and 2100 MHz bands was conducted during March, 2015 and Letter of Intent (LoI) to all the successful bidders have been issued on 27.05.2015 earmarking the frequencies in the above frequency bands. 50256 Nos. of Wireless Operating License Schedules have been issued and 56198 Nos. of Wireless Operating License Schedules have been renewed during the period from April to September 2015.

- 469 frequency blocks each of 200 kHz bandwidth in 1800 MHz and 841 frequency blocks each of 200 KHz bandwidth in 900 MHz band have already been assigned during the period from April 2015 to November 2015.

- Guidelines for spectrum sharing and spectrum trading have been issued. Harmonization of frequencies in 1800MHz band has been initiated.

- 150 Nos. of new frequencies/blocks to PMRT Services are likely to be assigned during December, 2015 to March, 2016. During the same period, 15,000 Nos. of Wireless Operating License Schedules and 5000 new schedules are likely to be issued.

4.4.3 SACFA SITING CLEARANCE

Standing Advisory Committee on radio Frequency Allocation (SACFA) clearances are granted for fixed wireless stations considering aviation hazard, interference free operations and line of sight obstruction. Siting clearances by SACFA are issued without prejudice to applicable bylaws, rules and regulations of local bodies such as Municipal Corporations/Gram Panchayats, etc.

4.4.4 SATELLITE COORDINATION WITH OTHER ADMINISTRATIONS

International coordination of satellite systems is required to be undertaken as per the provisions of the International Radio Regulations (RR) of the International Telecommunications Union (ITU). Coordination of frequency assignments for the individual satellite networks is necessary with satellite networks of other administrations for mutual coexistence and interference free operations of these networks.

- Coordination proposals were sent to the Administrations of Cyprus and UAE for coordination of ASTROSAT satellite networks of India.

- Information sent to Malaysian Administration for operator level coordination.

- Coordination information/proposal has been requested from Japan Administration.

4.4.5 International Coordination

- Coordination Request (CR/C) of INSAT-KA (74) satellite network has been published in BRIFIC 2787 dated 03.02.2015.

- Part I-S of INSAT-KU11(74), INSAT-NAV(55) and INSAT-KUHF(74) satellite networks has been published in BR IFIC 2887 & 2788

- Registration of frequency assignments (Part II-S) of INSAT-TTC (55) E & INSAT-TTC (83) E has been published in BR IFIC 2788 dated 17.02.2015.

- Part I-S of INSAT-G5 (74) satellite network has been published in BR IFIC 2789 dated 03.03.2015.

- Registration of frequency assignments (Part II-S) of INSAT-TTC (74) E, INSAT-TTC (93.5) E & INSAT-TTC (82) E has been published in BR IFIC 2790 dated 17.03.2015.

- Registration of frequency assignments (Part II-S) of TWSAT satellite network of India has been published in BR IFIC 2792

4.4.6 Advanced Publication Information

- API of IND-SAT-93.5E satellite network has been published in BRIFIC 2787 dated 03.02.2015.
- Filing for INSAT-KU63E in planned Ku band as per Appendix-30 B (AP-30B) of Radio Regulations has been submitted to ITU for its publication in concerned section of BR IFIC of ITU.

- BSS Plan band filing i.r.o. INSAT-KUP-BSS (93.5E) satellite network has been published in BR IFIC 2793

4.4.7 Protection of Indian space and Radio Astronomy Service from the Satellite Networks of other countries.

- Advanced Publication Information (API/s) published in BRIFIC in respect of satellite networks of China, UAE, Russia, Azerbaijan, Norway, Germany, France, Saudi Arabia, Japan, Singapore, Luxembourg, Administrations were objected in view of existing and planned INSAT satellite networks.

- Coordination requests (CR/Cs):- Frequency assignments published in BRIFIC in respect of satellite networks of Indonesia, UK, UAE, Japan, Spain, Turkey, France, Azerbaijan, Liechtenstein, Saudi Arabia and Norway Administrations were objected in view of existing and planned INSAT satellite networks.

- Frequency notices for registration (Part I-S):- Frequency assignments published in BRIFIC in respect of satellite networks of Indonesia, China, Russia, Japan Administrations were objected in view of existing and planned INSAT satellite networks.

- FSS Plan as per Appendix-AP30B:- Frequency assignments in respect of satellite networks of PNG, China and Russia, France, Saudi Arabia, Belarus, Cyprus, Sweden Administrations were objected in view of existing and planned INSAT satellite networks.

- BSS Plan as per Appendix-30/30A:- Frequency assignments in respect of satellite networks of UK, France and Qatar Administration were objected in view of existing and planned INSAT satellite networks.

4.4.8 Conferences

- National Preparation, participation and follow-up action for various international and regional conferences under aegis of International telecommunication Union (ITU) and Asia-Pacific Telecommunity (APT) were undertaken to protect national interests especially in the context of spectrum management and radio communication related matters.

- World Radio Communication conferences (WRC) are held every three to four years. It is the job of WRC to review, and if necessary to revise the Radio Regulations the international treaty, governing the use of the radio-frequency spectrum and the geostationary-satellite and non-geostationary-satellite orbits. It also coordinates and harmonizes the views of various stakeholders to finalize national view point on various agenda items**.** The WRC-15 and its associated meeting (RA-15, CPM 19-1) have been organized at Geneva during 26.10.2015 to 01.12.2015 and ten officers of DOT participated in that meeting.

4.4.9 PROJECT IMPLEMENTATION

The project titled “National Radio Spectrum Management & Monitoring System (NRSMMS)” is being implemented by the WPC Wing. Under the project, spectrum management and monitoring functions have been automated with a view to making spectrum management process more transparent, effective and efficient.

4.4.9.1 Actual Physical Progress during 2014-15

(i) Arbitration Tribunal for settlement of disputes relating to NRSMMS Project between M/s HFCL, India and WPC Wing, Department of Telecommunication, Ministry of Communications & IT has been setup. The Arbitral Tribunal has completed its 15 sittings. The Arbitral Tribunal in its order dated 27/08/2014 directed to submit evidence in Chief and Statement regarding release of Indemnity Bond and Trust Receipt. Additional Solicitor General (ASG) has been appointed for this case. The Arbitral Tribunal in its proceeding dated 08/11/2014 considered the submissions made on behalf of the parties relating to the return of Indemnity Bond and Trust Receipt. As per order dated 08/11/2014, the tribunal is of opinion that two documents should be returned to the Respondent without prejudice to the rights of the parties. Accordingly the Indemnity Bond and Trust Receipt have been returned to M/s HFCL.

(ii) Annual Maintenance Contract for the ASMS Software and Hardware has already been awarded to NIC. Two new servers have been procured by NIC for the WPC Wing. Two new UPS for these new servers have also been procured on DGSD Rate Contract in Nov. 2014. The batteries of UPS installed for ASMS Server Room have been procured.

(iii) Redesigning of WPC Website as per the guidelines for Indian Government Website (GIGW) by NIC is in final stage of completion.

(iv) Maintenance work of MMS Vehicle of WMS, Thiruvananthapuram and Repair of equipments (e.g. 2 nos. of Spectrum Analyzers of WMS Dibrugarh and Ahemdabad and 3 nos. of EB 200 Receivers of IMS Chennai, WMS Goa and Dibrugarh) have been carried out.

4.4.9.2 Financial Progress:

BE 2014-15: Rs. 2.40 crores
RE 2014-15: Rs. 1.40 crores
Expenditure: Rs. 0.37 crores

4.4.9.3 Performance in the first 9 months of the year 2015-16

(i) Arbitration Tribunal for settlement of disputes relating to NRSMMS Project between M/s HFCL, India and WPC Wing, Department of Telecom, Ministry of Communications & IT has been setup. The Arbitration Tribunal has completed its 18 sittings.

(ii) Redesigning of WPC website as per the guidelines for Indian Government Website (GIGW) by NIC is completed.

(iii) Antivirus-Kaspersky (2 in number) has been procured for web server security.

(iv) AMC case of 21 spectrum analyzers supplied under World Bank project is under progress.

4.4.9.4 Financial Progress:

(i) BE 2015-16: Rs. 0.66 crores
RE 2015-16: Rs. 0.66 crores
Expenditure: Rs. 0.22 crores

(ii) Target performance during 2016-17:
Information in prescribed proforma is attached at Annexure c.

(iii) Details of mechanism put in place to monitor physical and financial progress:
The project is reviewed by the concerned Joint Wireless Adviser and Wireless Adviser regularly.

4.5 Wireless Monitoring Organisation

Wireless Monitoring Organization continues to provide interference-free wireless services in the increasingly crowded radio environment besides providing vital technical data for the introduction of new services such as 3G, BWA etc. to WPC wing.

A**ctual Achievements during.01-04-2015 to 31-10-2015** and **anticipated Achievements during 01-11-2015 to 31-03-2016** is as given below:-

S. No.	Particulars	Actual achievements during 01-04-2015 to 31-10-2015	Anticipated Achievements during 01-11-2015 to 31-03-2016
1.	Monitoring Assignments Handled.	6975	5000
2.	No. of Wireless Transmission monitored.	74682	70000
3.	Technical assistance to users to maintain their operation within specified standards.	682	500

4.	Infringements communicated to various wireless users for remedial action.	1096	800
5.	Channel days utilized for Radio Monitoring.	3464	2000
6.	No. of Wireless Stations Inspected.	731	650
7.	No. of Radio Noise measurements.	57679	50000
8.	No. of high priority interference complaint resolved.	33	30
9.	No. of standard interference complaint resolved.	08	10
10.	Man days devoted for high level technical work.	48	40
11.	Training Courses Conducted	01	03
12.	Man days for Training	30	115

4.5.1. International Satellite Monitoring Earth Station at Jalna (Maharashtra) is utilizing its S-Band, C-Band and Extended C-Band facilities for monitoring and analyzing satellite downlink signals along with decoding of digital video broadcast signals from all satellites located in the GSO-arc of interest to India. The capability has been further enhanced by introducing Ku-Band Satellite Spectrum Monitoring facility for DTH, DSNG, VSAT services etc. Its measurement functionality is proposed to be enhanced in near future. A Real-Time Spectrum Analyser has been procured in this step.

Efforts are being made to enhance the satellite monitoring capability for Ka band as well using similar principal design & technology. Training courses on Satellite Spectrum Monitoring & Management are also being organised at ISMES for officers of Indian Radio Regulatory Services. The summary showing quantitative analysis of output by ISMES Jalna is tabulated below:

S. No.	**Particulars**	**Actual achievements during 01-04-2015 to 31-10-2015**	**Anticipated Achievements during 01-11-2015 to 31-03-2016**
1.	Number of Satellite assignments/ operations carriers monitored	620	450
2.	Number of Satellite Licensed carriers Monitored	558	400
3.	Total Number of Satellite Channels Monitored	603 Satellite TV Channels	90 Satellite TV Channels
4.	Number of Satellite Services Monitored	10 types of services	10 types of services

5.	Total Number of Satellite Channels found to be violating the permission	71 Channels	30 Channels
6.	No. of Assignments done for live coverage through temporary up-linking permissions	11 assignments	07 assignments
7.	Database for Satellite Licenses**"SAKSHAM"**	Total 519 Decision letters for Licenses entered till Oct -2015 into Database	50 Decision letters
8.	Database for Satellite Spectrum Monitoring**"SAJAG"**	Total 3547e-log sheets generated from **"SAJAG"** software database till Oct -2015	500 e-log sheets
9.	Number of Licenses involved in violations	22 licenses	15 licenses
10.	Number of Infringements Registered	39 cases	25 cases
11.	Number of Satellites Occupancy Check	29 Satellites	30 Satellites

4.5.2. Radio Monitoring — a regulatory and treaty requirement.

Radio monitoring service, a regulatory and treaty requirement, is carried out by the Wireless Monitoring Organisation of the Wireless Planning & Co-ordination Wing (WPC Wing), Ministry of Communications and IT, for the Government of India. It is essentially technical in nature and its broad objectives are derived from the international treaty document — *Radio Regulations* of the *International Telecommunication Union*.

4.5.3. Major functions of Wireless Monitoring Organisation (WMO)

The major functions of the WMO are as under:

(i) Resolution of the harmful interference;

(ii) Monitoring for identification of frequency sub-bands for introduction of new services and/or for additional allocation to existing services;

(iii) Monitoring for spectrum recovery — unused/ under-used frequency authorizations;

(iv) Monitoring for ensuring adherence to licensing conditions;

(v) Monitoring / measurements for sharing studies;

(vi) Assistance to domestic wireless users;

(vii) Assistance to foreign administrations;

(viii) Participation in special monitoring campaigns of the International Telecommunication Union;

(ix) Measurements on radio emissions (intentional & non-intentional) for the possible introduction of new radio communication standards, and also for studying the EMC compatibility of the proposed new installations;

(x) Inspection of licensed installations; and

(xi) Monitoring of space emissions to protect authorized satellite transmissions.

4.5.4 Challenges before WMO

The increasing dependence of the society (the Government and the public alike) on the wireless communications demands WMO to ensure interference free radio communication environment. Therefore, WMO's primary focus, at present, is on public mobile radio communication services, public broadcasting services and safety-of-life services.

WMO is earnestly gearing up its resources manpower and machine-power to ensure that these services continue to operate in interference-free environment. The primary reason for the interference protection to these services lies in their critical importance to the society as a whole. With respect to public mobile cellular service, WMO has twin objectives:

(i) To identify and eliminate the sources of interference occurring due to a multitude of reasons

(ii) To find unused spectrum for expansion of existing 2G services and for the 3G services. In so far as public broadcasting is concerned, its transmissions have been found to be affecting aeronautical mobile communications (civil aviation) and also infringing licensing parameters. To address the needs of such crucial services, WMO is in the process of procuring custom-designed radio monitoring products. Beside the service-aspect of radio monitoring, WMO has to ensure the **quality of the spectrum.**

4.5.5. The achievements/targets i.r.o. "**Women Empowerment**", **"Persons with disabilities" & Citizen's Charter** including other details are as under:

i) Schemes for the benefit of women and persons with disabilities: - Nil

ii) Budget allocation of Rs 6.0 Crore has been made under Plan in BE 2015-16 (Major Work -Civil) Plan. Out of this, an expenditure of Rs. 1.10 crore has been incurred.

iii) An allocation of Rs 26.47 has been made under Non-Plan in BE 2015-16, out of this an expenditure of Rs. 11.0 crore has been incurred,.

iv) Per capita expenditure, resources available for their utilization-: Not applicable.

v) Sanctioned & working strength: - Sanctioned = 616, Actual Strength = 353, Vacant = 263.

vi) Gender related issues (for chapter on women empowerment only):- NIL

vii) Citizen Charter:- Not notified

4.6 Universal Service Obligation Fund:

The New Telecom Policy 99 (NTP-99) envisages provision of access to basic [word basic deleted vide Indian Telegraphs (Amendment) Rules 2006] telecom services to all at affordable and reasonable prices. The resources for meeting the Universal Service Obligation (USO) are to be generated through a Universal Service Levy (USL) which would be a percentage of the revenue earned by the operators under various licenses.

In keeping with NTP-99, recommendations of TRAI on the issues relating to the USO were sought. Based on the decisions taken on the recommendations, the Universal Service Support Policy (USSP) was framed. The USSP came into effect from 01-04-2002. At present, the USL is 5% of the Adjusted Gross Revenue (AGR) earned by all the operators except pure value added service providers like voice mail, email etc.

The Indian Telegraph (Amendment) Act 2003 giving statutory status to USOF was passed by both houses of the Parliament in December 2003. Deemed to have come into force from 1st April 2002, the Fund is to be utilized exclusively for meeting the USO and the balance to the credit of the Fund shall not lapse at the end of the financial year. Credits to the fund shall be through Parliamentary approval. The rules for administration of the fund have also been notified on 26-03-2004.

Scope of Support from USOF:

As per the Indian Telegraph (Amendment) Rules, 2004 (and subsequent amendments in 2006 and 2008), the scope of USOF activities includes:

Stream-I	Public Access Telephones
Stream-II	Provision of Household Telephones in rural and remote areas.
Stream-III	Creation of infrastructure for provision of Mobile services in rural and remote areas.
Stream-IV	Provision of Broadband connectivity to villages in a phased manner.
Stream-V	Creation of General Infrastructure in rural and remote areas for development of telecommunication facilities.
Stream-VI	Induction of New Technological Developments in the telecom sector in rural and remote areas.

Implementation Status

4.6.1 Village Public Telephones

As on 31.05.2015, 5,81,183 out of the 5,93,601 inhabited villages[i.e. 97.9%] of the country as per Census 2001 have been covered with Village Public Telephones (VPTs). VPTs are being provided in remaining inhabited uncovered villages through on-going USOF scheme of VPTs in newly identified uncovered villages as per Census 2001

USOF Scheme for VPTs in identified uncovered villages as per Census 2001:

Reconciliation of the VPTs working in the inhabited villages as per Census 2001 was carried out taking into account the existing VPT and those provided under Bharat Nirman. All the remaining inhabited villages as on 01.10.2007 as per Census 2001 irrespective of criteria of population, remoteness, accessibility and law & order situations have been included for provision of VPTs with subsidy support from USO Fund under this scheme. Agreements in this regard were signed with BSNL on 27.02.2009. Under this scheme 51465 out of 62443 Village Public Telephones (VPTs) has been provided. The roll-out period has expired. The BSNL has requested for extension of Roll-Out period. The proposal is under examination.

4.6.2 USOF Support for expansion of Broadband Service

For expansion of Broadband Services, USOF has adopted a two pronged strategy i.e. launching of scheme for provision of broadband to the end users (such as Wireline/ Wireless/ Satellite Broadband Schemes) as well as augmentation of OFC backhaul

media for carrying the broadband traffic from rural areas to the core network. Accordingly, for rural and remote areas, the following schemes have been undertaken by USOF:

4.6.3 General Infrastructure Augmentation :

For provision of broadband in rural areas, sufficient back-haul capacity is required to integrate the voice and data traffic from the access network in the rural areas to their core network by strengthening the OFC network. Accordingly, this scheme considers OFC Network augmentation between the blocks' HQ and Districts' HQ to begin with. The States of Assam, Meghalaya, Manipur, Tripura, Mizoram, Arunachal Pradesh, & Nagaland have been taken up for implementation.

This OFC Schemes are based on BOO model, i.e. build, operate & own basis, and accordingly, the Telecom Service Providers, implementing the schemes would build, operate, own and manage all the equipment/infrastructure for the execution of the scheme.

All locations shall be connected on physical OFC Ring Route(s) with the DHQ node ensuring the cable route diversity and ring capacity of at least 2.5 Gbps, with the capability to efficiently transport various protocols, including TDM, IP, Frame Relay, etc., for integrated voice, data and video signals in all the specified districts.

The following Optical Fibre Networkschemes have been taken up:

4.6.3.1 **Optical Fibre Network Augmentation, Creation and Management of Intra-District SDHQ-DHQ OFC Network in Assam:**

The State of Assam has been taken up first for implementation. As per the outcome of the tender for implementation of this scheme in Assam, BSNL has been declared the successful bidder at a subsidy quote of Rs. 98.89 Crore, and subsequently, an Agreement has been signed with them on 12.02.2010 in this regard.

This OFC Scheme would connect 354 total locations in Assam in total 27 Districts in about58 months from the date of signing of the Agreement i.e. by December 2014. The Agreement shall be valid for a period of ten years from the effective date.

At least 70% of the subsidized bandwidth capacity, created under the scheme, shall be shared with the licensed service providers in the area of Assam at a rate not more than 26.22 % of the current TRAI ceiling tariffs.

4.6.3.2 **Optical Fibre Network Augmentation, Creation and Management of Intra-District SDHQ-DHQ OFC Network in NE-I Circle (comprising states of Meghalaya, Mizoram & Tripura):**

The States of Meghalaya, Mizoram & Tripura have been taken up for OFC augmentation in this scheme. As per the outcome of the tender for implementation of this scheme, M/s RailTel Corporation of India Limited has been declared the successful bidder at their subsidy quote of Rs. 89.50 Crore.

This OFC Scheme would connect 188 locations in 19 Districts within 36 months from the date of signing of the Agreement i.e. by 15.01.2015. The Agreement shall be valid for a period of eight years from the date of signing of agreement i.e. 16.01.2012.

At least 70% of the subsidized bandwidth capacity, created under the scheme, shall be shared with the licensed service providers in the area at a rate not more than 12% of the current TRAI ceiling tariffs.

4.6.3.3 Optical Fibre Network Augmentation, Creation and Management of Intra-District SDHQ-DHQ OFC Network in NE-II Circle (comprising states of Arunachal Pradesh, Manipur & Nagaland):

The States of Arunachal Pradesh, Manipur & Nagaland have been taken up for OFC augmentation in this scheme. As per the outcome of the tender for implementation of this scheme, M/s RailTel Corporation of India Limited has been declared the successful bidder at their subsidy quote of Rs. 298.50 Crore.

This OFC Scheme would connect 407 locations in total 30 Districts within 42 months from the date of signing of the Agreement i.e. by 15.07.2015. The Agreement shall be valid for a period of eight years fromthe date of signing of agreement i.e. 16.01.2012.

At least 70% of the subsidized bandwidth capacity, created under the scheme, shall be shared with the licensed service providers in the area at a rate not more than 27% of the current TRAI ceiling tariffs.

The status of the OFC schemes in NER (As on 30.11.2015) is as given below:

Sl. No	Item	Assam*	NE-I # (Meghalaya, Tripura, Mizoram)	NE-II (Arunachal Pradesh, Manipur, Nagaland)
1	No of Districts	27	19	30
2	No of Nodes (locations)	354	188 Meg(71)+Miz (62)+ Tri(55)	407 A(226)+M(62)+ N(119)
3	Operators (executive Agency)	BSNL	RailTel	RailTel

4	Date of Agreement	12.02.2010	16.01.2012	16.01.2012
5	Agreement period	10 years	8 years	8 years
6	Roll Out Period (Revised)	58 months (12.02.2010 to 31.12.2014)	48 months (16.01.2012 to 15.01.2016)	54 months (16.01.2012 to 15.07.2016) for Nagaland and Manipur 60 months (16.01.2012 to 15.01.2017) for Arunachal Pradesh
7	Progress	308 nodes installed	• Work awarded for trenching/ laying in all the districts • 1358 km duct laid • 976 km OFC laid • 104 nodes connected on OFC • 50 nodes commissioned in Tripura	• Work awarded for trenching/ laying for 21 districts out of 36 districts • 1826 km duct laid • 814 km OFC laid • 36 nodes connected on OFC • Roll out yet to start

4.6.4 Rural Wireline Broadband Scheme for provision of Broadband Connections

Under this scheme, BSNL will provide wire-line broadband connectivity to rural & remote areas by leveraging the existing rural exchanges infrastructure and copper wire-line network.

Under this scheme, BSNL will provide 8,88,832 wire-line Broadband connections to individual users and Government Institutions and will set up 28,672 Kiosks over a period of SIX-years, i.e. by 2015 (extended by one year from the original target of January, 2014). The subsidy disbursement is for (i) broadband connections, Customer Premises Equipment (CPE), Computer/Computing devices (ii) setting up of Kiosks for public access to broadband services. The estimated subsidy outflow is Rs.1,500 crore in 9 years' time.

Present Status: Under this scheme, as of 31st January 2015, a total of 6,56,345 broadband connections have been provided and 15,671 kiosks have been set up in rural and remote areas.

4.6.5 National Optical Fibre Network (NOFN):

NOFN is planned to connect all the 2,50,000 Gram Panchayats in the country through optical fibre utilizing existing fibers of PSUs viz. BSNL, RailTel and Power Grid (and of any desirous private operator) and laying incremental fiber wherever necessary for providing Broadband connectivity. Size of the incremental network is Approx. 5 Lakh Km. dark fiber network thus created will be lit by appropriate technology thus creating sufficient bandwidth (100 Mbps) at GPs level. Non-discriminatory access to the network will be provided to all the telecom service providers. These access providers like mobile operators, Internet Service Providers (ISPs),

Cable TV operators, content providers can launch various services in rural areas. Various applications for e-health, e-education, e-governance etc. will be provided. The project has been approved by Union Cabinet on 25.10.2011. The project is being funded by USOF and initial estimated cost of project is Rs.20,100 Crore. The project is being executed by a Special Purpose Vehicle (SPV) namely Bharat Broadband Network Limited (BBNL), which has been incorporated on 25.02.2012 under Indian Companies Act 1956. BBNL is getting the project executed through 3 CPSUs viz. BSNL, Railtel and Powergrid.

Status of BharatNet/NOFN (as on 31.12.2015):
Phase-I

The work of around 1,00,000 GPs under phase-l has been allocated to 3 CPSUs. Status of progress of work, as per the report submitted by CPSUs, is as follows:

A. BSNL/PGCIL/Railtel have finalized tenders for trenching and pipe laying for **2,592** blocks.
B. BSNL/PGCIL/Railtel have placed Purchase Orders for supply of **2,20,640**kms of PLB duct and work has been started in **2,207** Blocks.

CPSU	District	Block	GPs	Incremental cable to be laid (km)	PLB laid (km)	OFC laid (km)
BSNL	410	2,146	84,366	1,85,742	90682 (48.82%)	70298(37.85%)
RailTel	44	225	8,678	19,331	8594 (44.46%)	4967 (25.69%)
PGCIL	28	356	7,156	17,198	12369 (71.92%)	7236 (42.07%)
Total	482	2,727	1,00,200	2,22,271	111645 (50.23%)	82501(37.12%)

No. of GPs where cable laying is completed – **34,881**

Districts Completed

1. Kerala: All districts.
2. Karnataka: Mandya, Hassan, Chamraj Nagar, Bangluru urban

3. Punjab: Chandigarh.
4. Puducherry: All districts

Constitution of Expert Committee:

- An expert committee was constituted in Jan 2015 to review the strategy and approach towards speedy implementation of BharatNet/NOFN. The committee has submitted its report which is under examination in the Ministry and discussions are on-going with State Governments to solicit their active participation and ownership in the project.
- 14 States have confirmed willingness in writing to take up a state led model of BharatNet as per the enhanced architecture. 4 more States (Madhya Pradesh, Maharashtra, Manipur& West Bengal) have indicated consent but are yet to confirm in writing.

4.6.6 Scheme for Mobile Communication Services in Left Wing Extremism (LWE) affected Areas:

Cabinet Approval:

(i) On 20.08.2014, the Cabinet approved revised estimated cost of Rs. 3216.12 crores and project implementation cost of Rs. 3567.58 crores (inclusive of all taxes except octroi and local taxes) consisting of CAPEX and OPEX for 5 years for 1836 sites, discovered by BSNL through tender process; and OPEX for existing 363 towers for providing mobile services at locations identified by Ministry of Home Affairs in areas affected by Left Wing Extremism.

(ii) The ownership of the assets created under the project to be vested in Bharat Sanchar Nigam Limited (BSNL).

The state-wise breakup of locations is as below:

S. No.	State	No. of Locations	Already Installed by BSNL
1.	Andhra Pradesh	54	1
2.	Bihar	184	0
3.	Chhattisgarh	497	351
4.	Jharkhand	782	0
5.	Maharashtra	60	3
6.	Madhya Pradesh	22	6
7.	Odisha	253	0
8.	Telangana	173	2
9.	Uttar Pradesh	78	0
10.	West Bengal	96	0
Total		**2,199**	**363**

Chronology of Events:

Date	Details
04.06.2013	• Cabinet approved to nominate BSNL for execution of the Project. • Approved Project estimate - Rs. 3046.12 crores
24.07.2013	• Gazette Notification for amendment to the Indian Telegraph Rules issued. • This enables BSNL to execute the Project on nomination basis.
14.08.2013	• BSNL floated the tender. • The tender opened on 25.10.2013. • BSNL submitted report dated 20.01.2014.
27.03.2014	• Telecom Commission considered the Project cost of Rs. 3915.13 crores discovered by BSNL and decided to retender as the tender rate for 1836 towers was 21.72% higher than the estimated cost.
07.04.2014	• BSNL issued re-tender. • Tender was opened on 09.05.2014. • BSNL submitted report dated 02.06.2014.
13.06.2014	• Telecom Commission, recommended • Project cost of Rs. 3567.58 crores • For seeking Cabinet approval
20.08.2014	• Cabinet approved • Project cost of Rs. 3567.58 crores

Status of the Project:

(i) Agreement between USOF and BSNL has been signed w.e.f. 30.09.2014.

(ii) BSNL has awarded the work to successful bidders (M/s Vihaan Networks Limited and M/s HFCL).

(iii) 1288 sites are radiating as on 31.12.2015. This includes 932 new sites and 356 existing sites made operational by BSNL.

(iv) Remaining sites are expected to be completed by June, 2016.

4.6.7 DoT-USOF's Sanchar Shakti Scheme:

The Department of Telecommunication under its Gender Responsive Budgeting Commitments, had decided to launch pilot projects aimed at facilitating Rural Women's Self Help Groups' (SHGs) access to ICT enabled services as an aid to their education, training employment opportunities, health and safety.

Accordingly USOF decided to initiate gender specific USOF subsidized pilot projects under the aegis of Sanchar Shakti scheme. The Sanchar Shakti pilot scheme for Mobile Value Added Services (VAS) provisioning envisages development of content/ information customized to the requirements of women SHG members engaged in diverse activities in rural areas across India. The scheme entails innovative application of technology in designing & delivering the VAS content so as to ensure its easier accessibility & effective assimilation among the targeted women beneficiaries.

Four pilot agreements have since been signed between USOF Administration and the service providers in Pune district (Maharashtra circle), Ajmer district (Rajasthan circle), Uttarakhand and Srikakulam, East Godavari & Vishakhapatnam districts (A.P. circle).

The USOF subsidy disbursed for the Sanchar Shakti activity as on31.12.2015 is Rs. 96 lakh (Rs. 20 lakh during F/Y 2015-16 as on 31.12.2015).

4.7 PUBLIC SECTOR UNDERTAKINGS

4.7.1 BHARAT SANCHAR NIGAM LIMITED

BSNL has introduced cellular mobile service (GSM based) from October 2002 and has provided 790.36 lakh GSM connections till 31.10.2015.

3G services were launched commercially on 27th February 2009 in selected cities and the same is available in 3366 cities as on 31.10.2015.

BSNL as an Internet Service Provider (ISP) provides a full range of internet services including dial up internet services. All the wireline telephone connections are enabled for Dial up Internet services.

In pursuance to the Broadband Policy 2004 of the Government, BSNL introduced Broadband Services by the name "Data One" in January 2005 and has provided 99.74 lakh wireline broadband connections including Fiber to the Home (FTTH) broadband as on 30.11.2014. BSNL is also providing wireless Broadband service using 3G, Wi-Max & EvDO technologies.

BSNL has introduced a number of value added services both on Broadband and 3G. A few of them are listed below:

a. Mobile Banking services with National Payments Corporation of India (NPCI) on USSD Channel for No frill accounts under Financial Inclusion Project and Adhaar enabled Payment system.
b. VAS Retailing service i.e. Selling of VAS through Retail channel.
c. 3G Video chat services.
d. Range of M-Governance services on USSD & IVR platform through Department of IT.
e. Mobile Wallet & associated services with Banks.
f. Mobile Money Transfer Service to cover other Postal Circles as per requirements of Dept. of Posts.
g. Location Based Services.

The target & achievement with respect to "Outcome Budget 2014-15" is indicated at Annexure -P.

The target & achievement up to 31.10.2015 with respect to "Outcome Budget 2015-16" is indicated at Annexure P.

Targets:- The physical targets & achievements for the year 2015-16 (RE) are as follows:

S.No.	Item	Unit of Measurement	Target (2015-16)	Achievement upto 31.10.2015
1	Addition in GSM capacity	In lakh lines	60	32.54
2	GSM Mobile connections (VLR)	In lakhs	50	(-) 3.00
3*	Broadband connections (ADSL + FTTH+ EVDO+ WIMax+ 3G)	In lakhs	25	5.39
4	Addition in OFC	RKMs	15,000	2693
5	Replacement of legacy wireline network to Next Generation Network (NGN)	In lakhs	5	3

4.7.1.1 The financial outlay in respect of BSNL are given below:

(All figures are Rs. in Crore)

	Year	Outlay
BE	2015-16	7796
RE	2015-16	8143
BE	2016-17	7317

Funding: BSNL meets its requirement of development from its Internal Resources and through bonds/ debentures/ borrowings.

The capital outlay during the current financial year RE 2015-16 is Rs.8143 crores.

The capital outlay for the year BE 2016-17 is Rs.7317 Crores.

The target w.r.t. Outcome Budget for 2016-17 is enclosed as Annexure-3. The physical targets are as per the Mid-term appraisal of the 12th Five Year Plan. The physical targets will be as revised as per the MOU 2016-17 to be submitted to DPE. The same shall be finalized after discussion with the Task Force, constituted by DPE.

The physical targets for the year 2016-17 (BE) are as follows:-

S.No	Item	Unit of Measurement	Target (2016-17)
1	Addition in GSM capacity	In lakh lines	148
2	Addition in GSM Mobile connections	In lakhs	118
3	Broadband connections	In lakhs	10
4	Addition in OFC	RKMs	15,000
5	Replacement wireline Exchanges by NGN(Next Generation Network) Exchanges	In lakhs	20

4.7.1.2 Mechanism for monitoring physical progress

There is comprehensive performance measurement mechanism in BSNL to monitor the performance by the name GPMS (Group Performance Measurement System). GPMS scorecard is assigned for each Circle/ SSA/ Business Verticals at Corporate Office. This covers all the financial, operating and physical parameters

Further, the setup of BSNL comprises of circles (which in most cases covers a state) which are headed by CGMs, an officer of HAG level. The area within a circle is divided in SSAs (which in most cases covers a district) which are headed by GM/ TDM (i.e. SAG/ JAG level officer) depending on the size of telecom assets.
Thus, the primary level of monitoring is done at SSA level and reported to circle who consolidates the circle positions and reports to corporate office which consolidates the BSNL position. At the Corporate Level, corresponding functioning unit monitors the performance and put up monthly, quarterly and half yearly report to Director/ CMD and initiates corrective action with the approval of Director/ CMD. In addition, monthly, quarterly/ half yearly reports as specified by DOT are sent for monitoring and review by DOT.

4.7.1.3 The projects/initiatives planned during 2016-17 are given below:

1. Augmentation of GSM capacity
2. Replacement of BSNL's wireline exchanges by Next Generation Network (NGN) Exchanges.
3. Expansion of OFC network.
4. Strengthening of transmission core network by setting up of BSNL -ECR CONE (Enhanced capacity & resilience of core network)..

4.7.2 MAHANAGAR TELEPHONE NIGAM LIMITED

4.7.2.1 MTNL is the principal provider of fixed-line telecommunication service in these two Metropolitan Cities of Delhi and Mumbai and the jurisdiction of Company comprises the city of Delhi and the areas falling under the Mumbai Municipal Corporation, New Mumbai Corporation and Thane Municipal Corporation. MTNL's digital network provides host of supplementary services like Call Waiting, Call forwarding etc. to the customers.

The last decade and a half has been an eventful period in the existence of MTNL. There has been all-round development and growth and improved operational efficiency. In the present scenario, the Company is facing competition from other private telecom operators and is successfully adapting to new regulatory environment To meet the challenge of competition, the Company has taken various initiatives, which include re-structuring at operational level as well as broad basing the service portfolio being offered by the company. As the company has limited area of operation the emphasis has been placed on addition of new and value added services In addition to this the company is giving major thrust on the expansion of existing mobile and broadband services in both Delhi and Mumbai to provide high speed internet, high quality video and new generation wireless services.

4.7.2.2 Having achieved the telephone on demand situation in both the cities, the main thrust is on the expansion of existing mobile and broadband services in both Delhi and Mumbai to provide high speed internet, high quality video and new generation wireless services. Action will also be taken to generate fresh demands by providing quality services, better customer care & satisfaction, introduction of new services / schemes and innovative marketing strategies.

(i) The actual physical performance in 2014-15

S.No	Item	Annual Target	Achievement
1.	Net new connections including landline, WLL, Cellular and broadband connections *	250,000	2,11,691
2.	Optical Fibre Cable (in Fiber Km)	20,000	4603.22 #

* Net new connection target does not include the disconnected dormant GSM subscribers(subscribers inactive for more than one year)

\# The optical fiber laying project is a capital intensive as well as time consuming project involving digging and restoration at exorbitant charges. At present, MTNL is passing through the severe financial difficulties; MTNL is going slow on all Capital intensive projects. In addition to this, the low achievement is due to the difficulty faced in getting digging permission in the metro cities of Delhi and Mumbai (the operation area of MTNL).

(ii) Performance in the first 9 months of the year 2015-16

The performance during the year 2015-16 has been attached as Annexure-I

(iii) The target Performance during 2016-17

The physical target and financial outlay of 2016-17 are as under:

(a) Physical Targets for 2016-17

S.No.	Items	BE(2016-17)
1.	Net new connections including landline, Cellular and broadband connections *	**400,000**
2.	New Switching Capacity addition including capacity for GSM, NGN ,IMS	**450,000**
3.	Deployment of DSLAM / FTTH	**68,000**
4.	Optical Fibre Cable (in Fiber Km)	**30,000**

- Net new connection targets will not includes the disconnected dormant GSM subscribers (subscribers inactive for more than one year).

(b) Financial Outlay for 2016-17

(Rs. in Crores)

S. No.	Items	BE (2016-17)
1.	Switching (Including TAX/Tandem/NGN) and access lines (including GSM / 3G) in existing and new areas	**584.87**
2.	IT related services	**32.67**
3.	Expansion in New Services Areas abroad and National acquisitions	**1.00**
	Total	**618.54**

Note: Resources for some of the projects shall need to be garnered through deferred payment arrangements, leasing and / or capacity utilization linked payment. This shall supplement internal accrual / borrowing.

Government Assistance Required for Meeting the Targets

Considering the financial difficulties faced by the Company, for meeting the physical and financial targets proposed for BE-2016-17, Government assistance on the following is critical-

- Govt. support for mobilization of funds to meet capex requirement of its' projects for up-gradation / expansion of networks.

- Reduction HR Cost through a targeted VRS scheme or Salary support on diminishing basis for the targeted Govt. recruited employees.
- Monetization of surplus land and building by allowing MTNL to lease/ sell/ rent its available premises / lands for their effective & gainful utilization.
- Refund of Interest on BWA Payments.
- After expiry of the current license, Govt. support for extension of CMTS license for a period of 20 years along with support for spectrum charges in 900MHz & 1800 MHz band.
- Liberalization of 900 MHz spectrum allotted administratively to MTNL for launch of new services (3G/4G) in this spectrum by MTNL.

The details for the targeted performance during 2016-17 has been attached as Annexure-II

(iv) Details of the mechanism put in place to monitor physical and financial progress

Both the units send monthly achievement report with respect to the physical and financial progress made every month, these reports are also submitted to DOT. In addition to this Annual Plan targets for each year are fixed for both the units and are monitored on a regular basis.

An MOU is also signed with the Govt. of India and the progress of which is closely monitored by the DOT.

4.7.3 ITI LIMITED

- The paid-up Share Capital of the Company as on 31.12.2010 is ` 588 Crores, consisting of Rs. 288 crores Equity Shares and Rs.300 Crores Cumulative Redeemable Preference Shares. Out of the equity shares 92.87% is held by Government of India and 0.11% by Government of Karnataka and 7.02% by financial institutions and others. The Preference Shares are held by M/s Mahanagar Telephone Nigam Limited and M/s Bharat Sanchar Nigam Limited.
- The provision for payment of compensation of losses for the Srinagar Unit of ITI has been made in the non-plan Budget of DoT.
- Based on the seeking of Financial Assistance of Rs. 4156.79 crore, Draft Rehabilitation Scheme (DRS) was prepared by operating Agency (SBI) and submitted to BIFR which has been approved by BIFR in its hearing on 27th November 2012.

Annexure – L
Ref:4.3

TELECOMMUNICATION ENTINEERING CENTRE
OUTCOME BUDGET 2014-15

(` in Crore)

S. No.	Name of the Scheme/ Programme	Objective/ Outcome	Outlay 2014-15			Quantifiable/ Deliverables/ Physical Output	Project Outcome 1.3.2014 to 31.3.2015	Process/ Timelines	Remarks /
1	2	3	4			5	6	7	8
			4 (i)	4 (ii)	4 (iii)				
			Non-Plan Budget	Plan Budget	Complementary Extra-Budgetary Resources				
A.	**Core Activities (Figures in units)**								
1	New Generic Requirements, Interface requirements and Service Requirements	Preparation of new GRs / IRs				20	14		
2	Review of GRs/ IRs	Revision of existing GRs / IRs				25	23		
3	Preparation of Test Schedule/ Test Procedure	Preparation of Test Schedule				45	37		
4	Type approval	Certification to authorise use of equipment in telecom network				No target defined	4		
5	Interface approvals of customer equipment					No target defined	81		
6	Certificate of Approval					No target defined	0		
7	Fee collection from testing (Rupees of crore)	Fee collection from testing				No target defined	0.7944		
B.	**Project Activities**								
	NE- Region MH-45520020302 - TEC 020152- M&E	Satellite based Broadband network ---------- EMF Measuring Instrument		2.0000			0.0000		
	MH.52750080001-TEC								

1	**0103-EMF measuring Instruments** 010352- M&E	Procurement of EMF instruments for TERM Cells of DoT to carry out the measurements of radiation levels from various BTS towers.					0.0000		
2	**0102-SAR Lab**- (Mumbai & Delhi) 010252-M&E	To carry out testing and certification of mobile equipment about specific Absorption Rate(SAR)					0.0000		
3	**0105-Security Lab** 010552- M&E	To cater the telecom industry's need for security testing of various networks elements and CPEs					0.0284		
4	**0106-CPE Lab** 010652-M&E	To carry out testing of CPEs like telephone handset including multiline, cordless, CLIP, KTS, executive, modems, telephone attachment, POS terminals, SIP terminals, bluetooth, Wifi					0.0790		
5	**0107-Green Passport Lab** 010752- M&E	Certification of telecom product, equipment and service on the basis of ECR ratings, preparation of ECR document delineating the specification of the test procedure and methodology					0.0000		
6	0108-**Regional Test Lab** (Mumbai, Kolkata, Bengaluru, Delhi) 010852M&E	To carry out testing and certification of testing instrument					0.0000		
7	Expansion of LAN	Upgradation of existing LAN Infrastructure (including installation, testing, commissioning, etc.)	0.3000				0.0000		
	Total		**0.3000**	**2.0000**			**0.1074**		

TELECOMMUNICATION ENTINEERING CENTRE
Performance for the year 2015-16

(` in Crore)

S. No.	Name of the Scheme/ Programme	Objective/ Outcome	Outlay 2015-16			Quantifiable / Deliverables / Physical Output	Project Outcome 1-4-15 to 31-12-15	Process/ Timelines
1	2	3	4			5	6	7
			4 (i)	4 (ii)	4 (iii)			
			Non-Plan Budget	**Plan Budget**	**Complementary Extra-Budgetry Resources**			
A.	**Core Activities (Figures in Unit)**							
1	New Generic Requirements, Interface requirements and Service Requirements.	Preparation of new GRs / IRs				16	4	
2	Review of GRs/ IRs	Revision of existing GRs / IRs				20	12	
3	Preparation of Test Schedule/ Test Procedure	Preparation of Test Schedule				36	16	
4	Type approval	Certification to authorise use of equipment in telecom network				No target defined	1	
5	Interface approvals of customer equipment					No target defined	45	
6	Certificate of Approval					No target defined	0	
7	Fee collection from testing (Rupees of crore)	Fee collection from testing				No target defined	0.3590	
B	**Ongoing Project Activities**							
	NE- Region **MH-45520020302- TEC** 020152- M&E	Satellite based Broadband Network ---------- EMF Testing	Nil	0.0000	Nil	Part payment of BSNL to be released ---------- EMF Test instrument to be delivered	0	
	MH.52750080001-TEC							
1	**0101-NGN Test Lab** 010152-M&E		Nil	0.4000	Nil	Pending payment of vendor to be released after completion of pending points	0.0000	

2	**0102-SAR Lab-** (Mumbai & Delhi) 010252-M&E	To carry out testing and certification of mobile equipment about specific Absorption Rate(SAR)	Nil	1.6000	Nil	Pending payment of vendor to be released after completion of pending points of Delhi SAR Lab project & delivery of SAR Lab equipment at Mumbai	0.0000	
3	**0103-EMF measuring Instruments** 010352- M&E	Procurement of EMF instruments for TERM Cells of DoT to carry out the measurements of radiation levels from various BTS towers.	Nil	1.6000	Nil	Supply of EMF measuring equipment	0.0000	
4	**0105-Security Lab** 010552- M&E	To cater the telecom industry's need for security testing of various networks elements and CPEs	Nil	0.7500	Nil	Completion of Civil and Electrical works & delivery of equipment	0.0000	
5	**0106-CPE Lab** 010652-M&E	To carry out testing of CPEs like telephone handset including multiline, cordless, CLIP, KTS, executive, Modems, telephone attachment, POS terminals, SIP terminals, Bluetooth, Wifi	Nil	0.2000	Nil	Completion of Civil and Electrical works & delivery of equipment	0.0000	
6	**0107-Green Passport Lab** 010752- M&E	Certification of telecom product, equipment and service on the basis of ECR ratings, preparation of ECR document delineating the specification of the test procedure and methodology	Nil	0.2000	Nil	Procurement of Phase-I equipment	0.0000	
7	0108-**Regional Test Lab** (Mumbai, Kolkata, Bengaluru, Delhi) 010852M&E	To carry out testing and certification of testing instrument	Nil	0.2000	Nil	Completion of Civil and Electrical works & delivery of equipment	0.0000	
8	**LTE LAB** at TEC	Completion of Civil and Electrical works & delivery of equipment	Nil	0.0000	Nil		0.0000	

9	MVL	Procurement of vehicles against scrapped vehicles	Nil	0.0000	Nil		0.0000	
10	**Cyber Security Lab** in NTIPRIT	To Ensure Security of Telecom Networks and to conduct training in telecom security and testing	Nil	0.0000	Nil	Completion of Civil and Electrical works	0.0000	
11	**Setting up Knowledge Repository and Management Centre** in NTIPRIT	NTP-2012 envisages setting up a Telecom Knowledge Repository	Nil	0.0000	Nil	Preparation of SRS	0.0000	
	Total			**4.9500**			**0.0000**	

Annexure – M
Ref:4.5

WIRELESS MONITORING ORGANISATION
Performance for the year 2014-15

(Rs in Crore)

Sl. No.	Name of Schemes/Programmes	Objective/ Outcome	Outlay 2014-15			Target (April, 14-Mar-15)		Achievement during (April, 14-Mar-15)		Remarks
			Non-Plan Budget	Plan Budget	Complem-entary Extra Budgetary Resources	Financial	Physical	Financial	Physical	
1.	2	3	4(i)	4(ii)	4(iii)	5	6	7	8	9
1.	**Technical Schemes**									
1.1	**Mobile Monitoring, including Direction Finding, facility (proposed 12th FYP outlay 220 cr.): Procurement of:**	06 Nos. V/UHF vehicle-mounted mobile and portable monitoring, including Direction finding (DF) terminals for six new Wireless Monitoring Stations (WMSs) established in 11th FYP	N/A	Nil	Nil	100%	100%	Nil	Nil	The Bid document for the procurement of Six V/UHF terminals (vehicle-mounted and portable) for six newly created wireless monitoring stations under 11th FYP has been vetted by internal finance of DOT. It has been decided again to obtain a revised cost estimate on the basis of broader specifications and also to seek revised cost estimate of the project .
1.2		04 Nos. SHF Vehicle mounted & portable monitoring terminals	N/A		Nil	100%	100%	Nil	Nil	The procurement is subject to the decision of the arbitration related to the cancellation of the contract for the supply of equipment by M/s Thales under World Bank Project. Meanwhile WMO has initiated the revised cost estimate from the prospective vendors for the procurement.

	Name of Schemes/Programmes	Objective/ Outcome	Outlay 2014-15			Target (April, 14-Mar-15)		Achievement during (April, 14-Mar-15)		Remarks
			Non-Plan Budget	Plan Budget	Complem-entary Extra Budgetary Resources	Financial	Physical	Financial	Physical	
1.	2	3	4(i)	4(ii)	4(iii)	5	6	7	8	9
2.1	**Fixed Monitoring, including Direction Finding, facility (proposed 12th FYP outlay 40 cr.): Procurement of:**	06Nos. fixed HF monitoring facility	N/A	Nil	Nil	100%	100%	Nil	Nil	Necessary administrative approval to the proposal has been obtained & the bid document for its procurement is under consideration.
		Phased replacement of HF & VHF monitoring equipments at monitoring stations against the condemned equipment at a cost of Rs 4.0 crore.	N/A	Nil	Nil	100%	100%	Nil	Nil	Case under process.
3.1	**Specialised hardware/ software and auxiliary components (proposed 12th FYP outlay 80 cr. procurement of:**	Procurement of Real Time Spectrum Analysers, signal analyzers & radio network analyzers	N/A	2 Crore	Nil	100%	100%	1.9710 Crore	-	21 Nos Handheld Spectrum Analyzer have been procured at the cost of Rs 1.97 Crore through DGS&D. Competent authority has accorded administrative approval to the proposal & preparation of draft bid document is under process.
3.2		Replacement of five specialised RNSU equipments	N/A		Nil	Nil	Nil	Nil	-	

(In Crores)

Sl. No.	Name of Schemes/ Programmes	Objective/ Outcome	Outlay 2014-15			Target (April, 14-Mar 15)		Achievement during (April, 14-Mar 15		Remarks
			Non-Plan Budget	Plan Budget	Complem-entary Extra Budgetary Resources	Financial	Physical	Financial	Physical	
1.	2	3	4(i)	4(ii)	4(iii)	5	6	7	8	9
4.	**Manpower requirement** Creation of Project Implementation Unit (PIU).	To implement the technical schemes.	N/A	**@**	Nil	N/A	N/A	N/A	N/A	Telecom Commision has linked the proposal with the scheme at 1.2 (@ Funds to be met from the proposed outlay for scheme 5 below)
	Technical Schemes(A)		**N/A**	**2.0**	**Nil**	**100%**	**N/A**	**1.9710**	**N/A**	
5.	Misc. Expenses i.e. Salary, Office & Travel etc.	Expenditure under the different heads including salary in respect of 6 new WMSs .	N/A	1.00	Nil	100%	N/A	0.8846	N/A	Expenditure under the different heads including salary in respect of 6 new WMSs . Expenditure under the different heads including salary in respect of 6 new WMSs .
	Total (B)		**N/A**	**1.0**	**Nil**	**100%**		**0.8846**		
	Civil Works Total (C)	Miscellaneous Civil works such as procurement of land, construction of office buildings, staff quarters &	N/A	**2.7**	**Nil**	**100%**	It is difficult to physic-ally quantify	**2.5252**	It is difficult to physic-ally quantify different Civil works under	(i) Construction of office buildings by CPWD at WMSs Jalandhar, WMS Siliguri & WMS Mangalore.

		ancillaries. (including NE)					different Civil works under various stages of execution by CPWD		various stages of execution by CPWD	(ii) Acquisition of land/ assets from BSNL for WMSs at Bangalore, Hyderabad, Patna & Ranchi under consideration by BSNL and (iii) Payment of annual lease rent for land of WMS Raipur (iv) Registration fee for land of WMS Bhubaneswar .(v) Allotment of land for WMS Dibrugarh in North-East is under consideration of the State Govt. (vi)Construction of Boundry wall of WMS Dehradun is under process.
	G. Total (A)+ (B)+(C)		N/A	**5.7**	Nil	**100%**		**5.3808**		

Wireless Monitoring Organisation, DOT **ANNEXURE-M**

(Actual Performance ending Dec, 2015 for F.Y 2015-16)

(In Crores)

Sl. No.	Name of Schemes/Programmes	Objective/ Outcome	Outlay 2015-16			Target (April, 15-Mar-16) FY 2015-16		Achievement during (April, 15-Dec-15) FY 2015-16		Remarks
			Non-Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Financial	Physical	Financial	Physical	
1.	2	3	4(i)	4(ii)	4(iii)	5	6	7	8	9
1.	Technical Schemes									
1.1	**Mobile Monitoring, including Direction Finding, facility (proposed 12th FYP outlay 220 cr.): Procurement of:**	06 Nos. V/UHF vehicle-mounted mobile and portable monitoring, including Direction finding (DF) terminals for six new Wireless Monitoring Stations (WMSs) established in 11th FYP	N/A	1.0	Nil	100%	100%	Nil	Nil	The Bid document for the procurement of Six V/UHF terminals (vehicle-mounted and portable) for six newly created wireless monitoring stations under 11th FYP has been vetted by internal finance of DOT. It has been decided again to obtain a revised cost estimate on the basis of broader specifications and also to seek the approval of revised cost estimate of the project on the lowest budget estimate. The file has been sent to

										Ministry for approval of revised cost estimate.
1.2		04 Nos. SHF Vehicle mounted & portable monitoring terminals	N/A		Nil	100%	100%	Nil	Nil	The procurement is subject to the decision of the arbitration related to the cancellation of the contract for the supply of equipment by M/s Thales under World Bank Project. Meanwhile WMO has initiated the revised cost estimate from the prospective vendors for the procurement.

(In Crores)

	Name of Schemes/Programs	Objective/ Outcome	Outlay 2015-16			Target (April, 15-Mar-16) FY 2015-16		Achievement during (April, 15-Dec15) FY 2015-16		Remarks
			Non-Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Financial	Physical	Financial	Physical	
1.	2	3	4(i)	4(ii)	4(iii)	5	6	7	8	9
2.1	**Fixed Monitoring, including Direction Finding, facility (proposed 12th FYP outlay 40 cr.): Procurement of:**	06Nos. fixed HF monitoring facility	N/A	Nil	Nil	100%	Nil	Nil	Nil	Necessary administration approval to the proposal has been obtained & the bid document for its procurement is under consideration .
2.2		Phased replacement of HF and VHF monitoring equipments at monitoring stations against the condemned equipment at an estimated cost of Rs. 4.0 crore.	N/A		Nil	100%	Nil	Nil	Nil	Case is under process

3.1	**Specialised hardware/ software and auxiliary components (proposed 12th FYP outlay 80 cr.**	Procurement of Real-Time Signal Analysers/ portable signal analysers and Radio Network Analysers.	N/A	5.5	Nil	100%	100%	0.56	-	Sanction order for Rs. 55,93,593/- has been issue for procurement of 06 Handheld Spectrum Analyzers for six new WMS.
3.2		Replacement of existing five nos. specialized noise measurement equipment's	N/A		Nil	100%	Nil	NIL	Nil	b) The case of vetting of draft bid document for procurement of 5 RNSU equipment is under process with WPF

(In Crores)

Sl. No.	Name of Schemes/ Programs	Objective/ Outcome	Outlay 2015-16			Target (April, 15-Mar 16) FY 2015-16		Achievement during (April, 15-Dec15) FY 2015-16		Remarks
			Non-Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Financial	Physical	Financial	Physical	
1.	2	3	4(i)	4(ii)	4(iii)	5	6	7	8	9
4.	Manpower requirement Creation of Project Implementation Unit (PIU).	To implement the technical schemes.	N/A	**@**	Nil	N/A	N/A	N/A	N/A	Telecom Commission has linked the proposal with the scheme at 1.2 (@ Funds to be met from the proposed outlay for scheme 5 below)
	Total Technical Schemes			**6.5**	NIL	N/A	N/A	0.56	N/A	
5.	Misc. Expenses i.e. Salary, Office & Travel etc.	Expenditure under the different heads including salary in respect of 6 new WMSs .	N/A	1.40	Nil	100%	N/A	0.72	N/A	Expenditure under the different heads including salary in respect of 6 new WMSs . Expenditure under the different heads including salary in respect of 6 new WMSs .
	Total (A)		N/A	**7.90**	Nil	**100%**	N/A	**1.28**	**N/A**	
	Civil Works Total (B)	Miscellaneous Civil works such as procurement of land, construction of office buildings, staff quarters &	N/A	**2.20**	Nil	**100%**	It is difficult to physic-ally quantify	**0.80**	It is difficult to physic-ally quantify different Civil works under	i) Petty works in office buildings by CPWD at WMSs Jalandhar, & WMS Siliguri

		ancillaries.					different Civil works under various stages of execution by CPWD		various stages of execution by CPWD	are almost completed. (iii) Acquisition of land /assets from BSNL for WMSs at Bangalore, Hyderabad, Patna & Ranchi under consideration by BSNL (iv) Payment of annual lease rent for land of WMS Raipur. (v) Allotment of land for WMS Dibrugarh in North-East is being pursued with State Govt. (vi) Construction of Boundary wall of WMS Dehradun, Raipur, Goa, & Mumbai is under progress. * Sanction order for construction of Office building of WMS Nagpur for Rs 12.49 crore & IMS Mumbai for

										Rs 23.71 crore have been issued. * Sanction order of construction of boundary wall of WMS Raipur for Rs 3.83 crore & boundary wall of WMS Dehradun 59.9 Lakhs have been issued * Sanction order of construction of , boundary wall of Goa for Rs 31.79 Lakhs & sanction order for construction of boundary wall of WRHQ Mumbai for Rs 1.45 Crore Lakhs & 68.07 Lakhs have been re-validated.
	G. Total (A)+ (B)		N/A	**10.10**	Nil	**100%**	N/A	**2.08**		

Annexure –N

Ref:4.6

UNIVERSAL SERVICE OBLIGATION FUND

Actual Performance during 2014-15, Performance in the first nine months of 2015-16 and target performance for remaining 3 months of 2015-16

(` Rs in crore)

Sl. No.	Name of Activity	Total physical targets for the scheme		Physical outcome by 31-3-2015 (Progressive)	Financial year 2014-15		Financial year 2015-16								Remarks
							Annual Targets				Actual Performance upto Dec. 2015 (9 months)		Projected performance for Jan'16 to March'16 (3 Months)		
		Original	Revised		Financial Outlay (In crore)	Physical Outcome	Financial (Rs. In Crore)- Original	Financial (Rs. In Crore)- Revised	Physical - Original	Physical- Revised	Financial (Rs. In crore)	Physical	Financial (Rs. In crore)	Physical	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Operation & Maintenance of VPTs				-0.47		0	0			0		0		
2	Replacement of MARR VPTs (Total)	182766	185121		-0.52		0.14	0.03			0.03		0		
3	RDELs installed between 01.04.05 and 31.03.07 and (extended up to 31.3.2010)				10.30		0.00	0.63			0.53		0.10		
4	Mobile Phase-1-Shared Infrastructure Support (Towers & Mobile services)	7363	7353		9.97		1.25	7.64			2.73		4.91		(See chapter 4.6.1)

5	VPTs in newly identified uncovered inhabited villages as per Census 2001 (New VPT - 2)	62443	62443	51465	6.35	105	8.78	2.45			1.88		0.57	500	The rollout period has expired on 31.03.2015. BSNL has asked for extension. The proposal of BSNL is under examination. . (See chapter 4.6.1)
6	Support for Rural Wireline Household DELs installed prior to 01.04.2002 (RDELs-P)				0.00		1250.00	0.00			0.00		0.00		See Note - 4.6.4
7	Rural Wireline broadband connectivity in rural and remote areas	861459 BB connections and 27789 kiosks	888832 BB connections and 28672 kiosks	6,56,345 BB connections & 15,671 Kiosks	80.54	66,562 BB & 1,377 Kiosks	81.81	46.25	-	-	37.88	-	8.37	-	Scheme ended in January 2015. (See chapter 4.6.4)
8	Solar Mobile Charging Facilities	5000	5000		0.68		0.20	0.40			0.30		0.1		

9	Augmentation, creation & management of OFC network in Assam service area	OFC network augmentation between SDHQ & DHQ in Assam	OFC netwrok augmentation between SDHQ & DHQ in Assam, 354 OFC nodes to be installed	302 Nodes	31.40	1 Node	30.29	30.00	-	-	0.00	6 Nodes	30.00	-	Out of 354 chapter, 37 nodes are dropped as per the justification proposal by BSNL see chapter 4.6.3.1)
10	National Optical Fibre Network (NOFN)	Provision of BB connectivity to apprximate 250,000 Gram Panchayats	Provision of BB connectivity to appriximate 250,000 Gram Panchayats	Note below	1351.86	Note below	848.43	2520.75	Connection of 1,28,000 GPs	Connection of 1,00,000 GPs - PLB Duct to be laid 1,72,183 Kms - OFC to be laid 1,91,446 Kms	1254.97	1. PLB laid 61557 Kms. 2. OFC laid 51676 Kms. 3. 3407 No. of GPs end to end connected with equipment	1265.78	1. PLB 1,10,625 kms 2. OFC 1,39,770 Kms 3. 96203 GPs end to end connected with equipment	[See chapter 4.6.5

11	Mobile connectivity in Left Wing Extrimism (LWE) affected areas.	Provision of mobile services in about 2199 locations of LWE affected areas as idetified by Ministry of Home Affairs.	Installation & Maintenance of 1836 new Towers and Opex for additional existing 363 Towers.	Towers at 510 locations have been made functional including 363 existing Towers	596.51	Towers at 510 locations have been made functional including 363 existing Towers	100.00	419.00	1689 new Tower	1326 Tower	0.00	778 tower	419.00	548 Tower	The Scheme has been extended up to 30.06.2016. As on 31.12.2015, Mobile Services from 932 locations have started (see chapter 4.6.6) .
12	Satellite Rural Broadband Connectivity in rural and remote areas	Provision of broadband connectivity to specified rural & remote areas on satellite media (where terrestrial connectivity is not feasible)	600 Satellite BB connections		0.00			0.00			0.00		0		Scheme yet to be launched

13	Sanchar Shakti	Provision of mobile Value Added Services to rural women's SHGs for a period of one year			0.35		1.50	0.67			0.20		0.47		Agreements have been signed in four service areas (See chapter 4.6.7 .
14	Augmentation, creation & Management of OFC network in NE-I & NE -II (Earlier titled as SAs other than Assam)	595 Nodes (188 in NE-I and 407 in NE-II)	595 Nodes (188 in NE-I and 407 in NE-II)	NE-I,92 Nodes NE-II,14 Nodes	0	NE-I,92 Nodes NE-II,14 Nodes	77.60	42.30	-	-	3.95	NE-I,12 Nodes NE-II,22 Nodes	38.35	NE-I,84 Nodes NE-II,40 Nodes	
15	Augmentation of Satellite Bandwidth in Andaman & Nicobar Island	Augmentation of Satellite capacity from main land to Port Blair and other Islands and inter-islands for improving telecom service	Augmentation of Satellite capacity from main land to Port Blair and other Islands and inter-islan		0		0.00	29.88			0.00		29.88		MoU signed on 29.12.2015 to provide financial support to BSNL

		s in A&N Islands.	ds for improving telecom services in A&N Islands.												
	Total				**2086.97**		**2400.00**	**3100.00**			**1302.47**		**1797.53**		
	Rounded off to				**2086.98**		**2400.00**	**3100.00**			**1302.46**		**1797.54**		

1) BE 2015-16 was received for Rs.2400 crore. RE has been received for Rs 3100 Cr for the FY 2015-16 for all USOF schemes.

2) The physical numbers during the quarter represent the number of facilities for which subsidy is to be paid during the following quarters including those existing at the beginning of the quarter and eligible for subsidy.

3) Subsidy claims are received and disbursed in arrears after completion of the quarter in which the facilities are provided and/or remained operational.

4) The financial outlay figures are estimated and subject to actual disbursement in arrears, based on timely submission of claims by USPs and number of facilities actually provided and/or working.

Notes:

1.Financial outlay has been proposed on account of adjustments /spill - over.

2: Scheme has been closed on 30.11.2013 financial outlay has been proposed for spill over.

3. agreements were signed on 27.2.2009 for installation of about 62443 VPTs . About 10 to 15 % VPTs may have to be provided using DSPTs

4. Subsidy support of Rs. 1500 Crore to BSNL for one year w.e.f. 18.07.2011 for sustainbility of wireline connections has been paid. Rs. 1250 crore to BSNL for the year 2012-13 for sustainability of wireline connections prior to April 2002 is under consideration of the Government.

5: An Agreement was entered into with M/s BSNL on 20-01-2009 for provision of broadband connectivity to individual users and Govt. Institutions in rural and remote areas on wireline media. Agreement has been expired by Jan. 2015.

6.Financial outlay has been proposed for spill over .

7: Augumentation, creation & management of OFC Network with higher band width to SDHQ/Blocks in Assam.

8. (A) NOFN: Colum No. 5 - Physical Outcome by 31.03.2015 (Progressive).
i. TSP issued for 5773 blocks comprising of 2,13,000 GPs by March 15.
ii. 26 Pos for optical fibre placed
iii. PO issued for trunkey project of supply, installation mtc of GPON equipment of L1 bidder for 3000 OLTs & 58980 ONTs. APO issued for L1 bidder for the remaning quanitiy of L2, L3 and L4 bidders.
iv. PLB laid 50088 Kms.
v. OFC laid 30825 kms.
vi. ROW signed with all states / UTs accept Tamil Nadu.
vii. 590 GPs end to end connected with equipment (Kerala 480, Rajasthan 30, Karnataka 51, AP 15, Tripura 14).
8. (B) NOFN: Colum No. 7 - Physical Outcome of Financial Year 2014-15
i. PO issued for trukey project of supply, installation mtc of GPOn equipment of L1 bidder for 3000 OLTs & 58980 ONTs. APO issued for L1 bidder for the remaining quantitiy of L2, L3 and L4 bidders.
ii. PLB laid 47796 Kms.
iii. OFC laid 30467 kms.
iv. 590 GPs end to end connected with equipment (Kerla 480, Rajasthan 30, Karnataka 51, AP 15, Tripura 14)

9. Agreement signed on 30.9.2014 to install 2199 tower (1836 new sites &363 sites already installed by BSNL) in Left Wing Extremism (LWE) affected areas in 10 states

10. Sanchar Shakti : To facilitate women's Self Help Groups (SHGs) access to ICT enabled services. Financial support from USO Fund is envisaged to be provided towards mobile VAS subscriptions for SHGs.

Abbreviations used:

VPT: Village Public Telephone

MARR VPT: Multi Access Radio Relay VPTs

USP: Universal Service Provider

DELs: Direct Exchange Lines

DSPT: Digital Satellite Phone Terminal

OFC : Optical Fibre Cable

SMCF: Solar Mobile Charging Facilities

NOFN: National Optical Fibre Network

LWE :Left
Wing
Extremism

Annexure – O
Ref:4.7.1

BHARAT SANCHAR NIGAM LIMITED
Performance for the year 2014-15

(` in crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Quantifiable Deliverables (Physical Targets)*	Actual Achievement (Physical)	Outlay 2014-15 (Rs. In Crores)**	Processes/ Timelines	Remarks / Risks / Constraints
1	Mobile	Addition in GSM capacity	Total 100 lakh	53 lakh	Annual Outlay for 3791cr.		
			1st Quarter 25 lakh	14.94	1st Qtr. 379 cr.		
			2nd Quarter 25 lakh	16.38			
			3rd Quarter 25 lakh	9.01			
			4th Quarter 25 lakh	12.67	2nd Qtr. 758 cr.		
		Addition in GSM connections	Total 100 lakh	(-) 170.41 lakh			
			1st Quarter 25 lakh	(-) 51.00 lakh	3rd Qtr. 1137 cr.		
			2nd Quarter 25 lakh	(-) 26.90 lakh			
			3rd Quarter 25 lakh	(-) 52.71 lakh	4th Qtr. 1516 cr.		
			4th Quarter 25 lakh	(-) 39.81 lakh			
2	Wireline	To provide wireline DELs on demand & replacement of legacy wireline network by NGN	Total 5 lakh ***	5 lakh	Annual Outlay for 1168 cr.		
			1st Quarter 1.25 lakh		1st Qtr. 117 cr.		
			2nd Quarter 1.25 lakh		2nd Qtr. 234 cr.		
			3rd Quarter 1.25 lakh		3rd Qtr. 350 cr.		
			4th Quarter 1.25 lakh		4th Qtr. 467 cr.		

3	Broadband (ADSL+ FTTH+ EVDO+ WIMAX +3G)	To provide broadband connections (wireline + wireless) facilitating multiplay i.e voice,video & data on demand and allied services	Total 30 lakh	21.04 lakh	Annual Outlay for 597 cr.		
			1st Quarter 07.50 lakh	17.41 lakh	1st Qtr. 60 cr.		
			2nd Quarter 07.50 lakh	(-) 6.13 lakh	2nd Qtr. 119 cr.		
			3rd Quarter 07.50 lakh	9.84 lakh	3rd Qtr. 179 cr.		
			4th Quarter 07.50 lakh	(-) 0.08 lakh	4th Qtr. 239 cr.		
4	OFC	Laying & commissioning of OFC to provide Transmission network for new exchange equipment, mobile equipment & provide Bandwidth for core network	Total 20,000 RKMs	11,022 RKMs	Annual Outlay for 1586 cr.		
			1st Quarter 5000 RKMs	2788 RKMs	1st Qtr. 159 cr.		
			2nd Quarter 5000 RKMs	2211 RKMs	2nd Qtr. 317 cr.		
			3rd Quarter 5000 RKMs	1754 RKMs	3rd Qtr. 476 cr.		
			4th Quarter 5000 RKMs	4269 RKMs	4th Qtr. 634 cr.		

Note- * The Quantifiable Deliverables are as per MOU 2014-15 signed with DOT

** The distribution of Annual Financial Outlay quarterwise has been done as 10%,20%,30% and 40% for Q1, Q2, Q3 & Q4 respectively.

*** The target assigned is for the replacement of legacy wireline network by NGN

Annexure – O

BHARAT SANCHAR NIGAM LIMITED
Performance for the year 2015-16

(` in crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Quantifiable Deliverables (Physical Targets)*	Actual Achievement (Physical) up to 31.10.2015	Outlay 2015-16 (Rs. In Crores)**	Processes/ Timelines	Remarks / Risks / Constraints
1	Mobile	Addition in GSM capacity	Total 60 lakh	32.55	Annual Outlay for 4143 cr.		
			1st Quarter 15 lakh	14.14	1st Qtr. 414 cr.		
			2nd Quarter 15 lakh	15.05			
			3rd Quarter 15 lakh	3.36			
			4th Quarter 15 lakh		2nd Qtr. 829 cr.		
		Addition in GSM connections (VLR)	Total 50 lakh	-3.00			
			1st Quarter 12.50 lakh	-14.38	3rd Qtr. 1243 cr.		
			2nd Quarter 12.50 lakh	14.76			
			3rd Quarter 12.50 lakh	-3.38	4th Qtr. 1657 cr.		
			4th Quarter 12.50 lakh				

2	Wireline	To provide wireline DELs on demand & replacement of legacy wireline network by NGN	Total 5 lakh ***	5 lakh	Annual Outlay for 1440 cr.		
			1st Quarter 1.25 lakh	5 lakh	1st Qtr. 144 cr.		
			2nd Quarter 1.25 lakh		2nd Qtr. 288 cr.		
			3rd Quarter 1.25 lakh		3rd Qtr. 432 cr.		
			4th Quarter 1.25 lakh		4th Qtr. 576 cr.		
3	Broadband (ADSL+FTTH+EVDO+WIMAX+3G)	To provide broadband connections (wireline + wireless) facilitating multiplay i.e voice,video & data on demand and allied services	Total 25 lakh	5.39	Annual Outlay for 717 cr.		
			1st Quarter 06.25 lakh	-7.11	1st Qtr.72 cr.		
			2nd Quarter 06.25 lakh	7.61	2nd Qtr. 143 cr.		
			3rd Quarter 06.25 lakh	4.89	3rd Qtr. 215 cr.		

			4th Quarter 06.25 lakh		4th Qtr. 287 cr.		
4	OFC	Laying & commissioning of OFC to provide Transmission network for new exchange equipment, mibile equipment & provide Bandwidth for core network	Total 15000 RKMs	2693.00	Annual Outlay for 1843 cr.		
			1st Qtr 3750 RKMs	1065	1st Qtr. 184 cr.		
			2nd Qtr 3750 RKMs	1254	2nd Qtr. 369 cr.		
			3rd Qtr 3750 RKMs	374	3rd Qtr.553 cr.		
			4th Qtr 3750 RKMs		4th Qtr. 737 cr.		

Note- * The Quantifiable Deliverables are as per MOU 2015-16 signed with DOT

** The distribution of Annual Financial Outlay quarterwise has been done as 10%,20%,30% and 40% for Q1, Q2, Q3 & Q4 respectively.

*** The target assigned is for the replacement of legacy wireline network by NGN

Annexure – P

MAHANAGAR TELEPHONE NIGAM LIMITED

Performance for the year 2014-15

(Rs in crore)

S.No	Name of the Scheme / Programme	Objective / Outcome	Outlay 2014-15			Target 2014-15*		Achievement for the year 2014-15 (upto Dec 2014)		Remarks
			Non Plan Budget	Plan Budget (Rs in crore)	Complementary Extra Budgetary Resources	Financial Outlay (Rs in Cr)	Physical	Financial Outlay (Rs in Cr) provisional	Physical	
1	2	3	4(i)	4(ii)	4(iii)	5	6	7	8	9
Name of Unit: MTNL										
1	Net new connections including landline, WLL, Cellular and broadband connections **	Increase in Net new customers	_	_	_	_	250000	_	105081	
2	New Switching Capacity addition including capacity for WLL GSM, NGN ,IMS (in K)	Increase in New Switching Capacity, broadband ports, expansion of fiber network	_	446.55	_	446.55	0	139.16	0	#
3	Deployment of DSLAM / FTTH						0		0	
4	Optical Fibre Cable (in Fiber Km)						20000		3714	-
5	IT related services	IT related Projects	_	5.45	_	5.45	-		-	-
6	Expansion in New Services Areas abroad and National acquisitions	Service in Overseas Operations	_	0.00	_	0.00	-		-	Subject to new overseas suitable opportunities
	Total		_	**452.00**	_	**452.00**	-	**139.16**	-	-

(i)* Targets are fixed on yearly basis

(ii)** Net new connection targets will not includes the disconnected dormant GSM subscribers (subscribers inactive for more than one year).

(iii)# -The capacity addition targets were fixed in light of the proposed network up-gradation / expansion projects to be taken up during the year. However, Company is forced to go slow on these projects as due to severe financial constraint it was unable to mobilize funds required for these projects. Therefore these targets are revised to zero at the RE stage. Under revival plan Govt. support has been requested for helping MTNL in mobilization of funds required for Capex funding of important / critical network up-gradation / expansion projects.

Annexure – P

MAHANAGAR TELEPHONE NIGAM LIMITED
Performance for the year 2015-16

S.No	Name of the Scheme / Programme	Objective / Outcome	Outlay 2015-16			Target 2015-16*		Achievement for the year 2015-16 (upto Dec 2015)		Remarks
			Non Plan Budget	Plan Budget (Rs in crore)	Complementary Extra Budgetary Resources	Financial Outlay (Rs in Cr)	Physical	Financial Outlay (Rs in Cr) provisional	Physical	
1	2	3	4(i)	4(ii)	4(iii)	5	6	7	8	9
Name of Unit: MTNL										
1	Net new connections including landline, Cellular and broadband connections **	Increase in Net new customers	_	_	_	_	225000	_	65302	
2	New Switching Capacity addition including capacity for WLL GSM, NGN ,IMS (in K)	Increase in New Switching Capacity, broadband ports, expansion of fiber network	_	360.97	_	360.97	0	173.88	0	#
3	Deployment of DSLAM / FTTH						0		0	
4	Optical Fibre Cable (in Fiber Km)						20000		7589.55	-

5	IT related services	IT related Projects	_	8.08	_	8.08	-		-	-
6	Expansion in New Services Areas abroad and National acquisitions	Service in Overseas Operations	_	0.00	_	0.00	-		-	Subject to new overseas suitable opportunities
	Total		_	**369.05**	_	**369.05**	-	**173.88**	-	-

(i)* Targets are fixed on yearly basis
(ii)** Net new connection targets does not includes the disconnected dormant GSM subscribers (subscribers inactive for more than one year).
(iii)# -The capacity addition targets were fixed in light of the proposed network up-gradation / expansion projects to be taken up during the year. However, Company is forced to go slow on these projects as due to severe financial constraint it was unable to mobilize funds required for these projects. Therefore these targets are revised to zero at the RE stage. Under revival plan Govt. support has been requested for helping MTNL in mobilization of funds required for Capex funding of important / critical network up-gradation / expansion projects.

Annexure - Q
Ref:4.7.3
ITI Limited
Performance for the year 2014-2015

Sl.No.	Major Products	Performance in 2014-15
1	**SWITCHING** (NGN,SSTP, IPTAX , OCB, C-DoT, Etc.)	**86.25**
2	**TRANSMISSION** (STM 1,16 & 64, PCM MuX, DWDM , Radio Modem, Carrier Ether Net, etc.)	**1.73**
3	**WIRELESS PRODUCTS** (GSM, CDMA Etc.)	**73.52**
4	**BROAD BAND** (ADSL-CPE, ADSL-DSLAM, G-PoN Etc.)	**22.48**
5	**SERVICES** (NPR Data collection, Data Centre, AMC Business, Ros & IT, NSU, GSM-Franchise, etc.)	**223.43**
6	**Misc. & OTHERS** (NPR/MNID Smart SIM, USIM, SMPS, Banking Products, Cont. Mfg., Defence Prod., CLI Phones, Solar Penal, etc.)	**212.4**
	TOTAL	**619.81**

Contd.Annexure -Q
ITI Limited
Performance for the year 2015-2016 (upto December, 2015)

Sl.No	Products	Performance For first nine months (Upto Dec-2015)
1	**SWITCHING** (NGN,SSTP,MLLN, IPTAX , OCB, C-DoT, etc.)	**33.77**
2	**TRANSMISSION** (STM 1,16 & 64, PCM MuX, DWDM , Radio Modem, Carrier Ether Net, etc.)	**0.46**
3	**WIRELESS & BROAD BAND** (ADSL-CPE, ADSL-DSLAM, GPoN,CDMA, GSM Equipment, etc.)	**93.79**
4	**SERVICES** (NPR Data collections,Data Centre, AMC Business , Ros & IT, NSU, GSM Franchise, NFS Cable laying, NOFN, etc.)	**543.82**
5	**OTHERS** (NPR/MNID Smart SIM, USIM, SMPS, Banking Products, Cont.Mfg., Tablet PC, NFS Equip, Defence Prod., CIL Phone, Solar Penel, LED base prod. etc.)	**65.78**
	TOTAL	**737.62**

Annexure – R

NATIONAL INSTITUTE OF COMMUNICATION FINANCE
Performance for the year 2014-15

(` in Crore)

Sl. No	Name of Scheme / Programme	Objective / Outcome	Outlay 2014-15	Quantifiable Deliverables	Process/ Timelines	Achievements w.r.t. Col (5) as on	Remarks
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	Mid Career Training	Five stage mandatory Training to IP&TAFS officers for capacity building and preparing them to shoulder the higher responsibilities.	8.00	Three MCT in 2014-15	FY 2014-15	Nil	The apporval for conducting MCT was not received from DoT (HQ.).
2	Induction & Inservice Training	Probationery 'Training for Group A , 'B', and C level officers to prepare them for the job assigned/to be assigned.	4.00	Conducted as per DOPT guideline and National Trg. Policy	FY 2014-15	Training has been conducted as per approved calender of training.	
3	Institutional & Capacity Development Schemes & Initiatives	To develop an Institutional framework, Knowledge Bank, e-Governance, International Relation etc for the benefit of Institute and ultimately organisation as a whole.	3.00	Ongoing process.	FY 2014-15	Workshop/Seminar were organised as per approved calender of Training/requirement received from DoT (HQ).	
4	Physical Infrastructure for NICF	DPR, construction of balance Boundary wall to prevent encroachment, approach road, development of Ghitorni campus	68.05	Preperation of DPR. Master plan & Initial construction work	FY 2014-15	(A) Sanction of Competent Authority for setting up of Physical Infrastructure for NICF, based on DPR, at Ghitorni was issued vide No. 7-5/2000-Trg. Fin. (Pt. iv)/Ghitorni dated 09.10.2014. (B) Balance boundary wall could not be constructed for want of approval from the Competent Authority.	
	Total		**83.05**				

NATIONAL INSTITUTE OF COMMUNICATION FINANCE

Performance for the year 2015-16

(Rs in crore)

S. No.	Name of Schemes/ Programmes	Objective/ Outcome	OUTLAY 2015-16	Quantifiable Deliverables/ Physical Outputs	Processes/ Timelines	**Achievements w.r.t. Col (5) as on 31.12.2015**	Remarks/ Risk Factors
1	**2**	**3**	**4**	**5**	**6**	**6**	**8**
1	i) Mid Career Training	Five stage Training programmes for IP&TAFS offices	6.52	For institutionalized training (MCT) to individual officers for career progression preliminary work such as course development and design, preparation of course kit, Academic inputs exposure to various National/International Institue/Organ isation.	Full year	MCT-III was successfully completed.	
2	ii) Induction & In-service Course	Induction training of Gr.A, Gr.B and Gr.C officers and regular Inservice courses as per schedule and on relevant issues.	1.46	IP&TAFS Gr.A Probationers would be trained. Gr.B and Gr.C officers Induction Training.	Full year	Training has been successfully completely as per approved training calendar/requirement received from DoT (HQ.)	
3	iii) Institutional & Capacity Development Schemes & Initiatives	To develop an Institutional framework, Knowledge Bank, e-Governance, International Relation etc for the benefit of Institute and ultimately organisation as a whole.	1.02	Development of web based knowledge mangement portal, International Co-operation and training in the field of communications etc.	Full year	As per approved training calender/requirement received from DoT (HQ.)	

2	PHYSICAL INFRASTRUCTURE FOR NICF	Building of NICF Campus at Ghitorni, New Delhi	18.39	**(i)** Clearance from various local bodies for construction of building **(ii)** Appointment of agency for Architectural drawing and Execution of work for the Project. **(iii)** Execution of civil work.	Full year	(A) Clearance from AAI, Electricity and Environment have been obtained for getting the layout plan approved from SDMC. (B) Chief Architect, BSNL as Architect and CPWD as Executing Agency have been engaged for this project respectively.	

Chapter - V

FINANCIAL REVIEW/OUTLAY

Financial review/requirement of Programme/Schemes under Secretariat of the MOC, DOT(HQ), C-DOT, TEC, WPC, WMO, CCAs, VTMs, USO, Contribution to International Telecommunications Union, Asia Pacific Telecommunity, TRAI and Telecom. Dispute Settlement and Appellate Tribunal etc. for the financial years 2014-15, 2015-16 and 2016-17.

(Rupees in Crore)

	BE 2014-15			**RE 2014-15**			**Actuals 2014-15**		
	Plan	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**
Budgetary Provision									
I. Revenue Section									
MH - 3451 - Secretariat Economic Services									
(a) Secretariat (MOC)	0.00	6.49	6.49	0.00	4.15	4.15	0.00	4.11	4.11
(b) Directorate General Administration	0.00	104.54	104.54	0.00	192.26	192.26	0.00	100.92	100.92
© Telecommunication Engineering Centre (TEC)	0.00	28.55	28.55	0.00	28.70	28.70	0.00	28.53	28.53
(d) Centre for Development of Telematics (C-DOT)	172.75	0.00	172.75	172.75	0.00	172.75	171.45	0.00	171.45
(e) Administrator USOF	0.00	4.57	4.57	0.00	3.78	3.78	0.00	3.52	3.52
(f) Telecom Enforcement Resource & Monitoring Cells (TERMs)	0.00	58.00	58.00	0.00	60.17	60.17	0.00	60.20	60.20
(f) CCAs	0.00	100.00	100.00	0.00	89.34	89.34	0.00	89.64	89.64
(g) Tribal Area Sub Plan - CDOT	2.25	0.00	2.25	2.25	0.00	2.25	2.85	0.00	2.85
Total - MH – 3451	**175.00**	**302.15**	**477.15**	**175.00**	**378.40**	**553.40**	**174.30**	**286.92**	**461.22**
MH - 2071 - Pensions and other Retirement Benefits	**0.00**	**6386.00**	**6386.00**	**0.00**	**6386.00**	**6386.00**	**0.00**	**6954.46**	**6954.46**
MH - 2552 - North Eastern Areas									
(a) C-DOT	25.00	0.00	25.00	25.00	0.00	25.00	25.70	0.00	25.70
(b) Wireless Monitoring Services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
© Universal Service Obligation Fund (USOF)	378.00	0.00	378.00	226.50	0.00	226.50	35.92	0.00	35.92
Total - MH 2552 - North Eastern Areas	**403.00**	**0.00**	**403.00**	**251.50**	**0.00**	**251.50**	**61.62**	**0.00**	**61.62**
MH - 3275 - Other Communication Services									
(a) Wireless Planning & Co-ordination	1.90	8.53	10.43	0.95	6.60	7.55	0.31	6.81	7.12

(b) Wirelesss Monitoring Services	1.55	31.09	32.64	1.00	23.80	24.80	0.81	23.23	24.04
(c) Tribal Area Sub Plan - USOF	16.25	0.00	16.25	5.22	0.00	5.22	0.00	0.00	0.00
(d) Compensation to Service Providers for USOF	3142.75	0.00	3142.75	1855.26	0.00	1855.26	2051.06	0.00	2051.06
(e) Transfer to USOF	3537.00	0.00	3537.00	2086.98	0.00	2086.98	2086.98	0.00	2086.98
(f) Internation Co-operation (ITU, APT, CWTO & PTC)	0.00	27.24	27.24	0.00	23.25	23.25	0.00	21.91	21.91
(g) Telecom Development & Investment Promotion (TDIP)	1.00	0.00	1.00	0.50	0.00	0.50	0.50	0.00	0.50
(h) Refund of Upfront Charges of BWA Spectrum in respect of BSNL	0.00	100.00	100.00	0.00	100.00	100.00	0.00	100.00	100.00
(i) Payment of Principal on behalf of MTNL Bonds	0.00	0.00	0.00	0.00	72.42	72.42	0.00	71.75	71.75
(j) (i) Compensation to ITI Ltd.	0.00	6.00	6.00	0.00	5.00	5.00	0.00	5.00	5.00
(ii) Financial Reliefs to ITI Ltd.	0.00	0.00	0.00	0.00	165.00	165.00	0.00	165.00	165.00
(k) Transfer to Telecom Regulatory Authority of India (TRAI) General Fund	40.00	58.00	98.00	30.00	41.50	71.50	13.00	42.50	55.50
(l) Telecom Disputes Settlement and Appellate Tribunal (TDSAT)	1.55	13.05	14.60	1.00	10.10	11.10	0.50	11.27	11.77
(m) Human Resource Management (HRM) for IP&TAF Services	15.00	0.00	15.00	3.00	0.00	3.00	2.78	0.00	2.78
(n) Subvension to PSUs for infra projects of Govt. - Financial Support to MTNL	0.00	0.00	0.00	6.00	0.00	6.00	6.00	0.00	6.00
Total - MH - 3275	**6757.00**	**243.91**	**7000.91**	**3989.91**	**447.67**	**4437.58**	**4161.94**	**447.47**	**4609.41**
Total Revenue Section (I)	**7335.00**	**6932.06**	**14267.06**	**4416.41**	**7212.07**	**11628.48**	**4397.86**	**7688.85**	**12086.71**
II. Capital Section									
MH - 4552 - Capital Outlay on North Eastern Areas									
(a) OFC based network for Defence Services	305.00	0.00	305.00	40.00	0.00	40.00	35.80	0.00	35.80
(b) Wireless Monitoring Services	5.00	0.00	5.00	0.10	0.00	0.10	0.00	0.00	0.00
© TEC	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
(d) North East Projects executed by BSNL with Govt. Support	35.00	0.00	35.00	6.00	0.00	6.00	6.00	0.00	6.00
Total - MH – 4552	**347.00**	**0.00**	**347.00**	**46.10**	**0.00**	**46.10**	**41.80**	**0.00**	**41.80**
MH - 4859 - Capital Outlay on Telecommunication and Eletronics Industries									
(a) BBNL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(b) ITI Revival (Equity Investments)	460.00	0.00	460.00	192.00	0.00	192.00	192.00	0.00	192.00
(c) Infusion equity in TCIL	0.00	0.00	0.00	0.00	0.00	0.00	69.00	0.00	69.00
Total - MH – 4859	**460.00**	**0.00**	**460.00**	**192.00**	**0.00**	**192.00**	**261.00**	**0.00**	**261.00**
MH - 5275 - Capital Outlay on other Communication Services									
(a) WMO	42.20	0.00	42.20	4.00	0.00	4.00	4.49	0.00	4.49
(b) WPC	0.50	0.00	0.50	0.05	0.00	0.05	0.01	0.00	0.01
(c) TEC	13.00	0.00	13.00	2.00	0.00	2.00	0.11	0.00	0.11
(d) UAM&N	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
(e) OFC based network for Defence Services	2760.00	0.00	2760.00	385.00	0.00	385.00	322.28	0.00	322.28
(f) Physical Infrastructure for NICF	68.05	0.00	68.05	2.00	0.00	2.00	1.30	0.00	1.30
(g) Microwave Link between Champhai to Zokhawthar	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00
(h) Establishment of Sattelite Gateway Assistance to BSNL	5.00	0.00	5.00	5.00	0.00	5.00	5.00	0.00	5.00
(i) North East Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(j) Tribal Area Sub Plan – WMO	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00
(k) TRAI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(l) Construction of New Building for DoT (HQ)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total - MH – 5275	**2892.00**	**0.00**	**2892.00**	**401.05**	**0.00**	**401.05**	**335.19**	**0.00**	**335.19**
MH - 6859 - Loans for Telecommunication and Electronics Industries									
(a) Soft Loan to TCIL	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
(b) Loans to ITI Ltd.	1.00	96.00	97.00	0.00	300.00	300.00	0.00	300.00	0.00
Total - MH – 6859	**2.00**	**96.00**	**98.00**	**1.00**	**300.00**	**301.00**	**0.00**	**300.00**	**0.00**
MH - 7275 - Loans for Other Communication Services									
(a) Loans to HPIL	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
(b) Loans to BSNL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total - MH – 7875	**1.00**	**0.00**	**1.00**	**1.00**	**0.00**	**1.00**	**1.00**	**0.00**	**1.00**
Total Capital Section (II)	**3702.00**	**96.00**	**3798.00**	**641.15**	**300.00**	**941.15**	**638.99**	**300.00**	**638.99**
Total Telecommunication Services	**11037.00**	**7028.06**	**18065.06**	**5057.56**	**7512.07**	**12569.63**	**5036.85**	**7988.85**	**13025.70**

									(Rupees in Crore)
	BE 2015-16			RE 2015-16			BE 2016-17		
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
Budgetary Provision									
I. Revenue Section									
MH - 3451 - Secretariat Economic Services									
(a) Secretariat (MOC)	0.00	5.48	5.48	0.00	5.08	5.08	0.00	5.59	5.59
(b) Directorate General Administration	0.00	112.09	112.09	0.00	202.67	202.67	0.00	123.68	123.68
(c) Directorate - Professional Services	0.00	0.00	0.00	4.95	0.00	4.95	0.00	0.00	0.00
© Telecommunication Engineering Centre (TEC)	0.00	33.75	33.75	0.00	30.00	30.00	0.00	34.53	34.53
(d) Centre for Development of Telematics (C-DOT)	140.00	0.00	140.00	277.51	0.00	277.51	0.00	0.00	0.00
(e) Administrator USOF	0.00	3.38	3.38	0.00	5.50	5.50	0.00	5.39	5.39
(f) Telecom Enforement Resource & Montirong Cells (TERMs)	0.00	67.37	67.37	0.00	67.51	67.51	0.00	77.38	77.38
CCAs	0.00	106.95	106.95	0.00	103.71	103.71	0.00	116.84	116.84
Total - MH – 3451	**140.00**	**329.02**	**469.02**	**284.95**	**414.47**	**699.42**	**0.00**	**363.41**	**363.41**
MH - 2071 - Pensions and other Retirement Benefits	**0.00**	**6833.02**	**6833.02**	**0.00**	**7700.00**	**7700.00**	**0.00**	**8932.00**	**8932.00**
MH - 2552 - North Eastern Areas									
(a) C-DOT	0.00	0.00	0.00	20.00	0.00	20.00	22.00	0.00	22.00
(b) Wireless Monitoring Services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
© Universal Service Obligation Fund (USOF)	260.00	0.00	260.00	320.00	0.00	320.00	281.50	0.00	281.50
Total - MH 2552 - North Eastern Areas	**260.00**	**0.00**	**260.00**	**340.00**	**0.00**	**340.00**	**303.50**	**0.00**	**303.50**
MH - 3275 - Other Communication Services									
(a) Wireless Planning & Co-ordination	0.50	9.39	9.89	0.50	8.68	9.18	0.50	9.51	10.01
(b) Wirelesss Monitoring Services	1.50	26.47	27.97	0.80	26.60	27.40	1.50	30.31	31.81
(c) Tribal Area Sub Plan - USOF	13.00	0.00	13.00	12.00	0.00	12.00	12.64	0.00	12.64

(d) Compensation to Service Providers for USOF	2127.00	0.00	2127.00	2768.00	0.00	2768.00	2460.86	0.00	2460.86
(e) Transfer to USOF	2400.00	0.00	2400.00	3100.00	0.00	3100.00	2755.00	0.00	2755.00
(f) Internation Co-operation (ITU, APT, CWTO & PTC)	0.00	27.39	27.39	0.00	99.55	99.55	0.00	23.80	23.80
(g) Telecom Development & Investment Promotion (TDIP)	1.90	0.00	1.90	1.90	0.00	1.90	2.20	0.00	2.20
(h) Refund of Unfront Charges of BWA Spectrum in respect of BSNL	0.00	830.00	830.00	0.00	4199.84	4199.84	0.00	2200.00	2200.00
(i) Centre for Development of Telematics (C-DOT)	0.00	0.00	0.00	0.00	0.00	0.00	196.00	0.00	196.00
(j) Tribal Area Sub Plan - CDOT	0.00	0.00	0.00	2.49	0.00	2.49	2.00	0.00	2.00
(k) Payment of Principal on behalf of MTNL Bonds - Interest on Bonds	0.00	0.01	0.01	0.00	387.00	387.00	0.00	399.82	399.82
(l) Financial Support to MTNL (MAT)	0.00	0.01	0.01	0.00	492.26	492.26	0.00	0.00	0.00
(m) Financial Support to BSNL for South Asian Games	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00
(n) (i) Compensation to ITI Ltd.	0.00	5.98	5.98	0.00	5.98	5.98	0.00	0.00	0.00
(ii) Financial Reliefs to ITI Ltd.	0.00	150.00	150.00	0.00	494.02	494.02	0.00	545.79	545.79
(ii) Less revenue receipt from1275	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(o) Transfer to Telecom Regulatory Authority of India (TRAI) General Fund	18.00	50.00	68.00	15.00	43.89	58.89	16.00	47.00	63.00
(p) Telecom Disputes Settlement and Appellate Tribunal (TDSAT)	1.55	13.36	14.91	1.00	13.30	14.30	1.10	13.93	15.03
(q) Human Resource Management (HRM) for IP&TAF Services (NICF)	9.00	0.00	9.00	7.99	0.00	7.99	10.00	0.00	10.00
(r) Subvension to PSUs for infra projects of Govt. - Financial Support to MTNL	37.00	0.00	37.00	37.00	0.00	37.00	0.00	0.00	0.00
(s) Compensation to BSNL for surrender of CDMA Spectrum	0.00	0.00	0.00	0.00	169.16	169.16	0.00	0.00	0.00
(t) Compensation to MTNL for surrender of CDMA Spectrum	0.00	0.00	0.00	0.00	428.95	428.95	0.00	29.09	29.09
Total - MH - 3275	**4609.45**	**1112.61**	**5722.06**	**5944.20**	**6369.23**	**12313.43**	**5457.8**	**3299.25**	**8757.05**
Total Revenue Section (I)	**5009.45**	**8274.65**	**13284.10**	**6569.15**	**14483.70**	**21052.85**	**5761.30**	**12548.87**	**18310.17**

II. Capital Section									
MH - 4552 - Capital Outlay on North Eastern Areas									
(a) OFC based network for Defence Services	250.00	0.00	250.00	229.95	0.00	229.95	277.00	0.00	278.00
(b) Wireless Monitoring Services	0.00	0.00	0.00	0.05	0.00	0.05	2.00	0.00	2.00
© TEC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(d) North East Projects executed by BSNL with Govt. Support	10.00	0.00	10.00	10.00	0.00	10.00	3.00	0.00	3.00
Total - MH - 4552	**260.00**	**0.00**	**260.00**	**240.00**	**0.00**	**240.00**	**283.00**	**0.00**	**283.00**
MH - 4859 - Capital Outlay on Telecommunication and Eletronics Industries									
(a) BBNL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(b) ITI Revival (Equity Investments)	50.00	0.00	50.00	0.00	0.00	0.00	80.00	0.00	80.00
© Infusion equity in TCIL	1.00	0.00	1.00	16.00	0.00	16.00	0.00	0.00	0.00
Total - MH - 4859	**51.00**	**0.00**	**51.00**	**16.00**	**0.00**	**16.00**	**80.00**	**0.00**	**80.00**
MH - 5275 - Capital Outlay on other Communication Services									
(a) WMO	15.00	0.00	15.00	4.15	0.00	4.15	11.50	0.00	11.50
(b) WPC	0.16	0.00	0.16	0.16	0.00	0.16	0.20	0.00	0.20
© TEC	4.95	0.00	4.95	1.50	0.00	1.50	10.00	0.00	10.00
(d) UAM&N	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
(e) OFC based network for Defence Services	2150.00	0.00	2150.00	1990.05	0.00	1990.05	2423.00	0.00	2432.00
(f) Physical Infrastructure for NICF	18.39	0.00	18.39	5.45	0.00	5.45	17.00	0.00	17.00
(g) Microwave Link between Champhai to Zokhawthar	2.00	0.00	2.00	2.00	0.00	2.00	1.00	0.00	1.00
(h) Establishment of Sattelite Gateway Assistance to BSNL	40.00	0.00	40.00	40.00	0.00	40.00	9.00	0.00	9.00
(i) North East Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(j) Tribal Area Sub Plan - WMO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(k) TRAI	22.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00
(l) Construction of New Building for DoT (HQ)	25.00	0.00	25.00	0.51	0.00	0.51	15.00	0.00	15.00
Total - MH - 5275	**2278.50**	**0.00**	**2278.50**	**2043.82**	**0.00**	**2043.82**	**2495.7**	**0.00**	**2495.70**
MH - 6859 - Loans for Telecommunication and Electronics Industries									

(a) Soft Loan to TCIL	0.00	0.00	0.00	26.01	0.00	26.01	0.00	0.00	0.00
(b) Loans to ITI Ltd.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total - MH - 6859	**0.00**	**0.00**	**0.00**	**26.01**	**0.00**	**26.01**	**0.00**	**0.00**	**0.00**
MH - 7275 - Loans for Other Communication Services									
(a) Loans to HPIL	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
(b) Loans to BSNL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total - MH - 7875	**1.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Capital Section (II)	**2590.50**	**0.00**	**2590.50**	**2325.83**	**0.00**	**2325.83**	**2858.70**	**0.00**	**2858.70**
Total Telecommunication Services	**7599.95**	**8274.65**	**15874.60**	**8894.98**	**14483.70**	**23378.68**	**8620.00**	**12594.66**	**21214.66**
Less revenue receipt from1275	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-45.79	-45.79
Transfer to USOF	2400.00	0.00	2400.00	3100.00	0.00	3100.00	2755.00	0.00	2755.00
Net Total	**5199.95**	**8274.65**	**13474.60**	**5794.98**	**14483.70**	**20278.68**	**5865.00**	**12548.66**	**18413.66**

* A special purpose vehicle named "Bharat Broadband Network Limited (BBNL)" has been incorporated for implementation of National Optical Fibre Network (NOFN).

Revenue Section:
USOF has been shifted from non-plan to plan in BE 2011-12

Position of Utilization Certificates: No utilization certificate for the Grants released up to 31.3.2013 is outstanding.

CHAPTER – VI

REVIEW OF PERFORMANCE OF STATUTORY AND AUTONOMOUS BODIES

6.1. Telecom Regulatory Authority of India (TRAI)

(i) Actual performance for the year 2014-15

Under 'Plan' budget, TRAI is pursuing two schemes namely (A) The Institutional Capacity Building Project (ICBP) and (B) Purchase of Land and Building of TRAI Office. As per the Demand for Grants 2015-16 documents of DoT, a sum of Rs 30.00 Crores was allocated for Annual Plan 2014-15 (RE). The total expenditure under Plan for the financial year 2014-15 was Rs. 10.66 Crore.

Scheme wise details are as under:

A. The Institutional Capacity Building Project (ICBP) is being carried out as a part of the capacity building of the available human resources in TRAI to carry out its regulatory functions. The project has two components one relating to the Consultancy / Studies on Techno-regulatory issues and other relating to International Training of officers on regulatory issues.

6.1.1. The Activities conducted during the financial year 2014-15 are as below:

(i) Regional Offices (ROs) of TRAI

As part of the Institutional Capacity Building Project of TRAI under Plan Fund the Authority had approved establishment of 11 Regional Offices of TRAI during Financial year 2012-13 and 2013-14 at Guwahati, Kolkata, Patna, Bhopal, Chandigarh, Jaipur, Bangalore, Hyderabad and Mumbai, Lucknow & Delhi. Out of 11 ROs, 9 ROs (except RO at Lucknow & Delhi) had functioned during financial year 2012-13 & 2013-14. Subsequently, the Authority had reviewed the performance of Regional offices and approved continuation of 6 Regional offices of TRAI at Kolkata, Bengaluru, Hyderabad, Bhopal, Jaipur and Delhi during financial year 2014-15 and closure of 5 Regional offices at Chandigarh, Patna, Mumbai, Guwahati and Lucknow w.e.f. 31st March, 2014. Accordingly, 6 Regional Offices of TRAI located at Kolkata, Bhopal, Hyderabad, Bengaluru, Jaipur and Delhi functioned during financial year 2014-15.

(ii) **Domestic Training**: - So far as domestic training is concerned, expenditure of Rs.7,71,674/- (Rupees seven lakhs seventy one thousand six hundred seventy four only) has been incurred on domestic training of 55 officers during the financial year 2014-15.

(iii) (a) Audit and Assessment of Quality of Service
(b) Customer Satisfaction Survey

With a view to check the authenticity of information reported by the Basic Telephone (Wireline), Cellular Mobile Telephone Service and Broadband Service Providers and to ascertain customer perception of service, TRAI has engaged independent agencies for (i) Conducting an Objective assessment of Quality of Service provided by Basic Telephone (Wireline), Cellular Mobile Telephone Service and Broadband Service Providers and (ii) Subjective Customer Satisfaction Survey for assessing the Customers' Perception of the Service and also to assess the implementation and effectiveness of various Regulations, Directions and Orders issued from time to time covering each service area/circle.
The survey and audit work has been awarded on zonal basis to following independent agencies:-

S.No.	Name of the Independent Agency	Name of the Zone / Service Area
1.	M/s IMRB	Survey work: East Zone. Audit Work : East Zone
2.	M/s VOICE	Survey work : North Zone
3.	M/s Mott Mac Donald	Survey work : West Zone
4.	M/s Spectrum Planning Ltd	Survey Work : South Zone
5.	M/s CS Datamation	Audit Work : South Zone
6.	M/s TUV South Asia	Audit Work : North & West Zone

The Survey work for the period June to November 2014 (Half yearly) was carried out by the above mentioned agencies and the press releases was issued on 13.2.2015 for the information of the stakeholders.

The Audit work for the period April – June 2014 and July – September 2014 was carried out and the Press Releases were issued on 16th October 2014 and on 24th December 2014 respectively for the information of the stakeholders.The Audit work for the period October to December 2014 was carried out and the reports submitted by these agencies was under examination.

(iv). Workshop/Seminar

Various Seminars and Workshops on regulatory issues were organized during the reporting period.

(v). Field Trial /Testing/ Experimenting /Pilot Project on Random Real Time Monitoring

Pilot drive test on SSA basis completed within the frame work of audit and assessment of QoS by independent agencies.

(vi). Telecom Customer Complaint Mechanism System

The project of TCCMS was completed on 31st July 2014.

(vii). Consultancy on 'Next Generation Network'

Consultation paper was released on 30th June 2014. Open House Discussion (OHD) on Consultation Paper was held on 2nd December 2014.

(viii). Open House Discussions (OHDs)

Consultation Papers on various Regulatory were published and Open House Discussions on those issues were held during the report period.

(ix). Engagement of consultant for Study of Beta of Telecom Service sector and market rate of return (F&EA)

The Consultant, M/s NIBM Pune submitted the updated calculations for QE September 2012 (3rd updation) on 25thApril 2014 and for QE December 2012 (4th and last updation) on 9th May 2014. All quarterly updations have also been accepted by the Authority. The final payment has been made to the consultant after deducting TDS on 13th October 2014.The study stands completed.

(x). International Trainings and Symposium

An International Training and Symposium on "ICT regulatory challenges in Indian Smart Cities" was conducted in 24-26 March 2015.

(xi). Visit cum Study tour/ International Trainings /Workshops /Seminars etc. during the period is detailed at Annexure-S

B. The second project 'Purchase of Land and Building for TRAI' is aimed at obtaining own office premises. The Status report for financial year 2014-15, is as under:

Efforts are being made for obtaining land or office space for TRAI Office / Building. In this connection, Secretary, TRAI wrote a DO letter to Chairman, Telecom Commission (TC) & Secretary (T), Ministry of Communication & IT, DoT, on 3rd December 2014 for allocation of about one acre area in the premises of Central Telegraph Office, BSNL, Netaji Nagar, New Delhi or Kidwai Bhawan building presently in the possession of MTNL, New Delhi, for construction of own building.

6.1.2. <u>Performance for the first 9 (Nine) months of the year 2015-16</u>

Under 'Plan' Budget, TRAI is pursuing Two Schemes namely (i) The Institutional Capacity Building Project (ICBP) and (ii) Purchase of Land and Building of TRAI Office. An allocation of Rs.15.00 Crore has been made at BE stage as per the Demand for Grants 2015-16 documents of DoT. The total expenditure under 'Plan' Head till 31st October 2015 is Rs. 9.35 Crore.

The Scheme wise physical performance is as under:

A. The Institutional Capacity Building Project (ICBP) is being carried out as a part of the capacity building of the available human resources in TRAI to carry out its regulatory functions. The project has two components one relating to the Consultancy / Studies on Techno-regulatory issues and other relating to International Training of officers on regulatory issues.

The Activities conducted during the first 9 (Nine) months of financial year 2015-16 are as below:

(i) Regional Offices of TRAI

Performance of 6 Regional offices of TRAI i.e. Kolkata, Bengaluru, Hyderabad, Bhopal, Jaipur and Delhi have been reviewed again from time to time by the Authority and as per the approval of the Authority, these Regional offices have been approved for continuation during financial year 2015-16 and for the next financial year 2016-17.

(ii) Survey of QoS

(iii) Audit and Assessment of Quality of Service

With a view to check the authenticity of information reported by the Basic Telephone (Wireline), Cellular Mobile Telephone Service and Broadband Service Providers and to ascertain customer perception of service, TRAI has engaged independent agencies for (i) Conducting an Objective assessment of Quality of Service provided by Basic Telephone (Wireline), Cellular Mobile Telephone Service and Broadband Service Providers and (ii) Subjective Customer Satisfaction Survey for assessing the Customers' Perception of the Service and also to assess the implementation and effectiveness of various Regulations, Directions and Orders issued from time to time covering each service area/circle.

The survey work had been awarded on zonal basis to M/s IMRB for East Zone, M/s VOICE for North Zone M/s Mott Mac Donald for West Zone and M/s Spectrum Planning Ltd for South Zone. The survey work for the period December 2014 to May 2015 has been carried out & final Survey Reports of the Report were published on 7th September 2015. For the next half year June-November, 2015, the survey work has been completed and the reports are under examination.

The Audit work had been awarded on zonal basis to M/s CS Datamation for South Zone, M/s TUV South Asia for North & West Zone and M/s IMRB for East Zone. The audit work for the period January-March 2015 has been carried out and after the approval of Authority, Press Release was issued on 1st July 2015. The audit work for the period April-June 2015 has been carried out and a Press release was issued in the regard on 16th October, 2015. The Audit for July-Sept. 2015 has been completed and the report is under examination.

After fresh tender, the Audit work has been awarded on zonal basis to M/s C S Datamation for South Zone, M/s IMRB for West & East Zone and M/s PhiStream Consulting Private Limited for North Zone on 9th September 2015 for carrying out the work of Audit & Assessment of Quality of Service w.e.f. 1st October 2015.

(iv) Workshop /Seminar

Various Workshops on Regulatory issues were organised during the first 9 months of the financial year 2015-16 (i.e. from 1st April 2015 to 31st December 2015).

(v) Domestic Training conducted during the period

Expenditure of Rs.6.00 lakhs (appx.) has been made on domestic training of 32 (Thirty two) TRAI officials during 2015-16 (April-December 2015).

(vi) Field trial/ Testing/ Experimenting/ Pilot Project on Random Real time Monitoring

Pilot drive test on SSA basis completed within the framework of audit and assessment of QoS by independent agencies.

(vii) Open House Discussions (OHD)

Consultation Papers on Various Regulatory issues were published and Open House Discussion on those issues were held during the report period.

(viii) Studies through consultant/outside agencies (Cost Modeling under NGN Environment)

Studies through consultant / outside agencies (Cost Modeling under NGN Environment) will be carried out during September 2015 to March 2016.

(ix) AMC for NIC Server

The AMC for NIC Server has been done and payment has been released. An amount of Rs. 27.07 lakh released upto December, 2015.

(x) AMC for Computers, UPS & Website

The AMC for Computers, UPS and website has been done. The amount of Rs. 3,20,486/- released upto December, 2015.

(xi) AMC for NCCP Portal

The AMC for NCCP Portal was renewed for the period from 1st March 2015 to 29th February 2016.

(xii) Telecom Customer Complaint monitoring system.

Project Development for broadcasting sector is being finalized with NIC.

(xiii) Visit cum Study tour/ International Trainings/Workshops/Seminars etc. during the period is detailed at Annexure-T

(III) <u>The target performance during 2016-17</u>

TRAI is pursuing two projects under Plan Expenditure, namely, (i) Institutional Capacity Building Project of TRAI consisting of consultancy Studies and Trainings of TRAI Officials and (ii) Purchase of Land and Building for TRAI. A sum of Rs.16.00 Crores (Sixteen Crores) has been allocated as BE 2016-17 as per the information received from DoT.

(iv) Details of mechanism put in place to monitor physical and financial progress

The Physical and Financial progress of the 'Institutional Capacity Building Project' is monitored by Secretary, TRAI. Meetings are taken by Secretary, TRAI at periodic intervals to monitor the progress of this project. The project is well formulated and the progress of the project is reported periodically to Department of Telecommunications.

Annexure-S
Ref:6.1.1(xi)

Institutional Capacity Building Project of TRAI
Details of International Trainings/ Visits of TRAI officials, under Plan Fund
(1st April 2014 to 31st March 2015)

Sl.	Details of Visit	Place of Visit	No. of Nominations	Date
1.	5th Annual Asia Pacific Operators Summit	Bali, Indonesia	Member & Advisor	22-24 April 2014
2	NCTA's Cable Show 2014	Los Angeles CA, USA	Principal Advisor	29th April-1 May 2014
3.	14th APT Policy and Regulatory Forum (Preparation for Ministers' Meeting) (PRF-14)	Pattaya, Thailand	Advisor	20-22nd May 2014
4	3rd APT Preparatory Meeting for PP-14 (PP14-3)	Kaula Lumpur, Malaysia	Advisor & Deputy Advisor	2-4th June 2014
5	14 Global Symposium Regulators	Bahrain	Member, Principal Advisor & Advisor	2-5th June 2014
6	APT Conference Preparatory Group for WRC-15 and meeting with MCMC, Malaysia	Australia & Malaysia	Secretary & Advisor	9-16th June 2014
7	APT Workshop on Disaster Management Communications	Tokyo, Japan	Deputy Advisor	24-26th June 2014
8	4th ITU-ACMA Asia-Pacific Regulators'' Roundtable from 21-22 July 2014 and as a Speaker in the ITU –ACMA International Training Program from 23-25 July 2014 in Sydney, Australia	Sydney, Australia	Member & Advisor	21-25th July 2014
9.	15th Meeting of the South Asian Telecommunications Regulators' Council (SATRC-15)	Paro, Bhutan	Member and Joint Advisor	05-07th August 2014

10.	Strategic Costing and Business Planning for Quadplay	Bangkok, Thailand	Joint Advisor and SRO	13-22nd August 2014
11	11th Asia-Pacific Telecommunication and ICT Development Forum (ADF-11) on 8-9 September, 2014 and Asia-Pacific ICT Ministerial Meeting on "Building Smart Digital Economy through ICT".	Brunei Darussalam	Member and Secretary	08-11th
12	ITU Asia Pacific Centre of Excellence training on "Interactive Multimedia Services and Pay TV"	Hanoi, Veitnam	Principal Advisor	9-10 September 2014
13	ITU 4th Green Standards Week	Beijing, China	Advisor and Joint Advisor	22-26 September 2014
14	ITU 19th Meeting of Telecommunication Development Advisory Group (TDAG)	Geneva	Member and Advisor	29 September -01 October 2014
15	International Institute of Communications'(IIC) International Regulators Forum on 6-7 October and 45th Annual Conference on 8-9 October, 2014	Vienna Austria	Chairman	06-09 October 2014
16	ITU Plenipotentiary Conference (PP-14)	Busan, Korea	Advisor and Joint Advisor	20-24 October 2014
17	Cable and Satellite Broadcasting Association of Asia (CASBAA) convention 2014 and associated Policy Roundtable in Hong Kong	Hong Kong	Advisor	26-29 October 2014
18	Foreign Institutional Investors Meet in Hong Kong.	Hong Kong	Chairman and Advisor	27-28 October 2014
19	Sixth GSMA Mobile Money for the Unbanked (MMU) Leadership Forum and in the breakout and case studies sessions to be held prior to the	Cape Town, South Africa	Member and Advisor	5-7 Nov., 2014

	Leadership Forum			
20	Third Meeting of the m-Powering Development Initiative Advisor Board on 6th December 2014 and ITU Telecom World 2014 from 7-10 December 2014	Doha, Qatar	Chairman, Advisor and Joint Advisor	7-09 Dec-14
21	ITU-T Study Group Meeting	Kochi, Kerala	Joint Advisors	8-11 Dec.2014
22	ITU-T Study Group Meeting	Kochi, Kerala	Advisors	11-15 Dec.2014
23	ITU-T Study Group Meeting	Kochi, Kerala	Advisors and Deputy Advisor	16-18 Dec.2014
24	4th Meeting of the APT Conference Preparatory Group for WRC	Bangkok, Thailand	Advisor and Deputy Advisor	9-14 Feb 2015
25	SATRC Working Group Meeting on Policy, Regulation and Services	Kathmandu, Nepal	Joint Advisors	25-26 Feb 2015
26	GSMA Mobile World Congress 2015	Barcelona, Spain	Chairman, Secretary & Advisors	2-5 March 2015
27	18th Meeting of the APT Wireless Group (AWG-18)	Kyoto, Japan	Advisor & Joint Advisor	9-13 March 2015
28	Expert Speaker Event to meet Foreign Institutional Investors on 17th March 2015 and ITU/IDA Regulators' Leadership Retreat from 18-20 March 2015 in Singapore	Singapore	Chairman	17-20 March 2015

Annexure-T
Ref: 6.1.2 (xiii)

Institutional Capacity Building Project of TRAI
Details of International Trainings/ Visits of TRAI officials under Plan Fund
(1st April 2015 to 31st October 2015)

Sl.	Details of Visit	Place of Visit	No. of Nominations	Date
1	Investors Meeting on 20th April, Meeting in Inmarsat, Headquarters in London on 21 April & Commonwealth Cybersecurity Forum 2015 from 22-24 APril at London	London	Chairman	20-24 April 2015
2.	Participation as a Speaker in the 10th Annual Fibre to the Home (FTTH) Asia pacific Conference	Jakarta	Principal Advisor	19-21 May 2015
3.	World Summit on the Information Society (WSIS) Forum 2015	Geneva	Member & Principal Advisor	25-29 May 2015
4.	SATRC Working Group Meeting on Spectrum	Sri Lanka	Advisor & Joint Advisors	27-28 May 2015
5.	Participation as an expert in Communication Asia 2015 Summit/Broadcast Asia 2015	Singapore	Principal Advisor & Advisor	2-5 June 2015 (A) & 4-5 June 2015 (Pr. Adv.)
6.	ITU Regulatory Associations Meeting, 8 June 2015 and 15th Global Symposium for Regulators (GSR), 9-11 June 2015 in Libreville, Gabon	Gabon	Member & Advisor	8-11 June 2015
7.	London Action Plan (LAP) Secretariat Annual meeting	Dublin, Ireland	Advisor	9-12 June 2015
8.	Annual Global Seminar on "Broadband for all and bilateral meetings with Swedish Telecom Regulator and Telecom Operators	Stockholm, Sweden	Secretary & Advisor	22-25 June 2015
9	GSMA Mobile World Congress Conference	Shanghai	Member, Principal Advisor & Deputy Advisor	15-17 July 2015
10	5th Meeting of the APT Conference Preparatory Group for WRC-15 (APG15-5)	Seoul, Korea	Advisor & Deputy Advisor	27 July-1 August 2015
11	Participation as a speaker at the 12th Asia Pacific Telecommunication and ICT Development Forum (ADF-12)	Macao, China	Advisor RO & Joint Advisor	22-24 September 2015

12	ITU Regional Economic and Financial Forum of Telecommunications /ICTs for Asia and Pacific, ITU-T SG3RG-AO Meeting and ITU-T Focus Group Meeting on Digital Financial Services	Kuala Lumpur, Malaysia	Advisor	28 Sept-2 October 2015
13	M/s MNP Interconnection Telecom Solutions India Pvt. Ltd. for Officials from TRAI/DoT and other DoT Agencies.	New Jersey, USA	Secretary & Advisor	28 Sept-2 October 2015
14	International Institute of Communications (IIC) International Regulators Forum (IRF) the 46th Annual Conference of International Institute of Communications (IIC) from 5-8 October 2015 to be held at Washington DC and other engagements in US	USA	Chairman & Advisor	5-10 October 2015 6-9 October 2015 (Adv.)
15	The Commonwealth Preparatory Meeting for WRC-15	London	Member, Principal Advisor & Advisor	7-9 Oct.2015
16	ITU Telecom World 2015	Budapest, Hungary	Member & Advisor RO	12-15 October 2015
17	Cable and Satellite Broadcasting Association of Asia (CASBAA) Policy Roundtable	Hong Kong	Chairman & Principal Advisor	26-28 October 2015
18	Study Visit on bkash model of USSD-based mobile banking service organized by National Payment Corporation of India (NPCI)	Bangladesh	Joint Advisor	23-26 November 2015
19	ITU UNESCO Conference on Gebder and Media	Geneva	Member and Advisor	7-10 December, 2015
20	Participation as Speaker in ITU-ASEAN Forum on OTT Service Business and Regulatory Trends	Phnom Penh, Cambodia	Advisor	8-9 December, 2015
21	Seminar on Progress in the APT for the year 2015 (SPA-15) on 7 December , 2015 and 39th Session of the Management Committee of the Asia Pacific Telecommunity on 8-11 December, 2015	Phra Nakhom, Si Ayutthaya Thailand	Advisor	7-11 December, 2015
22	Workshop on Digital Financial Services and Financial Inclusion (14th December, 2015) and the Fourth Meeting of the ITU-T Focus Group Digital Financial Services (15-16 December, 2015)	ITU Headquarters, Geneva	Chairman and Advisor	14-16 December, 2015
23	Participation as a Speaker in SATRC workshop on Policy, Regulation and Services	Pokhra, Nepal	Principal Advisor	21-23 December, 2015
24	SATRC workshop on Policy, Regulation and Services	Pokhra, Nepal	Joint Advisor	21-23 December, 2015

Appendix

Proposed Seminar /Workshops /Symposium / Consultancies /Studies /Surveys etc. for the year 2016-17

1. Holding of Seminar/Workshop for digital addressable Cable TV System (DAS).
2. Conduct of Workshop/Seminar/Symposium to understand the Modern Trends in TV, Digital broadcasting and distribution and the technical, legal, commercial and Regulatory Issues that emerge with the arrival of next generation TV and Broadcasting Technologies.
3. Open House Discussions on various issues.
4. Survey of Quality of Service.
5. Audit and Assessment of Quality of Service
6. Customer Education Programme.
7. International and Domestic training for Institutional Capacity Building.
8. Visit cum Study tour to the office of Telecom Regulator (and their telecom operators) countries such as Japan, Egypt, Greece, Brazil etc. with whom TRAI has MoUs.
9. To organize one Joint Seminar/Workshop with other countries / organizations as a follow up of MoU signed between TRAI.
10. To organize the Training / Seminar / Conference with ITU / APT.
11. Annual ITU-D membership contribution from TRAI.

6.2. Telecom Disputes Settlement & Appellate Tribunal (TDSAT)

The Plan expenditure of TDSAT is primarily for capacity building of the tribunal through undertaking study tours, conducting seminars in different parts of the country to raise awareness amongst the general public regarding dispute settlement, and upgradation of reference material in the tribunal.

i) The actual physical performance in 2014-15:- As per Annexure (U)

ii) Performance in the first 9 months of the year 2015-16 (up to 31/12/2015):- As per **A**nnexure (V) Physical

Actual Financial performance:

(Rs in cr)

Sl No	Programme	Annual Plan 2015-16(B.E.)	Cumulative Progress up to 31/12/2015
1	Upgradation of TDSAT reference Library	0.10	0.0128
2	Study tour for familiarization of the Telecom regulatory environment/Training	1.00	0.0583
3	Holding of Seminar on Telecom Disputes Settlement	0.45	0.1160
	TOTAL=	**1.55**	**0.1871**

Reason for short fall: - Post of one Member lying vacant from 29/07/2011 to 11/05/2015. The Post of Director lying vacant from 18/09/2013 to 19/08/2015. The posts of Registrar, Joint advisor are also lying vacant during the current year in spite of efforts to fill their up till date.

iii) The target performance during 2015-16:- The information for the year 2016-17 has been furnished in the prescribed format as desired. (Annexure II).

iv) Details of the mechanism put in place to monitor physical and financial progress:
Physical and financial progress monitored constantly and systems are in place to detect possible slippages.

6.3 Centre for Development of Telematics (C-DOT)

C-DOT focuses on research and development in the technology areas of optical, broadband wireless, active sharing wireless infrastructure, next generation packet, and software-intensive applications like network management etc. to provide technology for high-speed communication. Number of technology products has been developed and successfully field tried with technology approval for introduction in the network.

Accomplishments and activities during FY 2014-2015

FY 2014-2015 witnessed significant progress in the development of state-of-the-art cutting edge technologies, technology trials, efforts in technologies' commercialisation, which include signing of MoUs with manufacturers, technologies' promotions, showcasing to prospective vendors, building requisite IPR assets, etc.

Some of the major technology projects, wherein progress has been made, are summarised below.

- **Communication and security research and monitoring:** Centralised Monitoring System (CMS) infrastructure rollout, which include installation of Central Monitoring Centre (CMC) data centre at Delhi, Regional Monitoring Centre (RMC) data centre in 21 Licensed Service Areas (LSA), International Long Distance (ILD), Interception Store-and-Forward Server (ISF), etc., for lawful interception of voice and data by LEAs (Law Enforcement Agency).
- **Broadband technologies:** Carrying out SW adaptations of multi-Terabit Router for IMS (IP Multimedia System) and LTE (Long Term Evolution).
- **Next generation mobile technologies:** Development for LTE Femto eNodeB system and Fixed and Mobile Converged Platform (FMCP).
- **Carrier networks transport technologies for transport and access networks:** Technology development for the next generation PON system for applications requiring more bandwidth in the access and DWDM-based transport network system for long haul applications.
- **Telecom services and applications:** SW development for Unified Network Management System (UNMS) and Customised Development for Rural Services (CPRS).
- **Secure wireless and wire line networks:** Design and development of Wireless Phone Secure (WiPS) tablet.
- **Next Generation security for telecom and data networks:** Development of an Advance Intelligent Monitoring System (AIMS) to scale up the architecture framework of the present CMS, development of interception solutions for new technologies like LTE/LTE-A, IMS-compliant FMCP, integration with other security agency solutions, like, content analysis, integration of satellite and marine interception and advance intelligence manager with AI (Artificial Intelligence) techniques.
- **Satellite-based technologies:** Design and development of a satellite hub baseband system.
- **Enabling technologies and telecom networks:** Feasibility studies and/or prototype developments on emerging telecom technologies.
- **Technology field implementation/trials:** Field implementation of some of the technologies.

Through these indigenous developments and the support of indigenous manufacturers, C-DOT offers complete solutions required for urban, rural, north-east, and strategic sectors, such as, Defence and security. Besides, C-DOT also provides life-time support to its technology in the TSPs' network with continuous technology upgradation, value addition, bug-fixing and providing alternate designs to address component obsolescence.

Achievements and progress made in the various schemes of technical projects are discussed in the following sections.

Communication and security research and monitoring

The progress under this development scheme includes development, enhancements, SW customisation and progressive rollout of the technology in the field.

Technology rollout for CMS had commenced and progressively various activities were completed. Main CMC infrastructure installation was completed and it was powered up for upto 60% capacity, site preparation was done, DR functionality was lab-tested in minimum configuration, installation and integration of 3 ILDs were completed, installation and commissioning of ISF equipment at all TSP sites were completed for 21 LSAs and pilot RMCs are operational in 16 LSAs and TSPs were integrated and testing is going on. RMC IT infrastructure was received onsite for 14 LSAs and installation is in progress. Site preparation for CMC DR activities is going on.

Delhi and Karnataka LSAs with pilot RMC are ready for rollout of services.

Broadband technology

Broadband technology development includes multi-Terabit Router (commercial-grade system) development.

Multi-Terabit Router (MTBR) design implementation is in progress with completion of SW adaptations for IMS, LTE, and about 60% completion of Router HW development. SW porting on the available HW is progressively going on. Overall project is approximately 75% completed.

Next generation mobile technology

Activities on next generation mobile technology comprise of development for LTE-A (Long Term Evolution-Advanced) – a 4^{th} generation mobile technology, and Fixed-and-Mobile Converged Platform (FMCP) for delivery of services to fixed and mobile subscribers.

FMCP technology development has been completed, leading to readiness of C-DOT IMS core, copper access node, integrated release of Fixed Line PrePaid (FLPP) and online recharge server with IMS core. Equipment for field trial of copper access node has been installed in MTNL network and AT (Acceptance Testing) process is going on. IMS core serves as the backbone for voice and video calls in LTE network deployment.

LTE-A technology development activities accomplished during the year include ToT (Transfer of Technology) process initiation for Femto LTE system in FDD band and completion of development of LTE Femto in TDD band. Besides, significant progress has been made to develop various other nodes, namely, Radio Resource Management (RRM), Self Organising Network (SON), and Operation and Administration Module (OAM), and their lab testing is going on at present.

Carrier networks transport technologies for transport and access networks

Development for carrier networks transport technologies is planned to address the needs of the emerging applications that are data-centric, demanding high bandwidth and large data rate for flow of information, requiring transport/backhaul, metro/aggregation, and access networks to evolve with upcoming technology trends. The ongoing development activities are as follows:

- Optical Aggregation and Access System (OAAS) – A next generation PON technology, namely, 32G PON system based on WDM. Development and lab validation for WDAN ONT and OLT has been completed – thus, 32G PON (WDAN) system is ready for field trial.

- Optical Core Network (OCN) - A 100G DWDM transport network system. Development has been completed for the terminal equipment with 100G Muxponder, and system integration and testing for partially equipped TEs (Terminal Equipment) with 100G Muxponder has been completed. Partially equipped TE for DWDM supporting 100G line rate is ready and development for TE with 40G Muxponder is in progress.

Telecom services and applications

Telecom services and applications activities aim to build SW platforms, applications to address changing technology trends towards convergence of applications, networks, contents and value-added services creating differentiation. At present, development for following SW platforms is going on.

- Unified NMS (UNMS) - A converged NMS platform, which facilitates in monitoring and managing service providers' network and services. Generic UNMS platform development is in progress, for supporting a host of network management functionalities, and addressing requirements of different networks, namely, NFS, TSPs, ISPs, etc. Separate SW releases for PoC in the NFS network and pilot trial in other clients' networks – TSPs, ISPs, etc, have been made ready.

- Customised Platform for Rural Services (CPRS) – A SW platform for building rural applications with advance features, like, gesture and speech recognition, NFC (Near-Field Communication), etc. The features implemented so far include online Aadhaar authentication, gesture recognition, video conferencing, etc. Pilot trial for the platform has also commenced.

Secure wireless and wireline networks

Activities under this technology scheme aims at creating intra and inter department secure communication network within various ministries of the government. Under the scheme, project WiPS (Wireless Phone Secure) is ongoing, which involve development of core network elements, end user device(s) for setting up a secure mobile wireless network using standard wireless technologies, like, 3G, Wi-Fi.

The design for the end-user device – secure tablet (ver.2) - has been completed and packaging design is going on.

Satellite-based technologies

Development of Gateway for terrestrial connectivity has been completed and delivered to the customer. Design, development and integration of hub baseband system have also been completed.

Next generation security for telecom data networks

A project to develop an Advanced Interception and Monitoring System (AIMS) is going on to address the enhanced security and interception requirements of LEAs.

The progress made under this project includes completion of development of interception for new technologies, namely, LTE, NGN LIS, and support IPLC (International Private Leased Circuit). Also, SW development for advanced Intelligence Manager (IM) has also completed with release of standalone IM SW version, which provides functionalities like target SMS content analysis (support for English and Indian languages), community pattern identification in call data, entity-based tower intelligence SW for bulk data collection, etc.

New releases have also been made for the existing CMS solutions, which address bug-fixes and support features, like, ILD, LBS, multiple LIS provision, multilingual SMS, GPRS decoding, support for 3G video call (MONA codecs), etc.

Enhancements, new features, upgradation, adaptations and technical support for developed technologies including the North-East program

This scheme focuses on development efforts related to enhancements, evolution, feature addition, scalability, value addition and customisation for changing requirements. These are envisaged for the developed, deployed and to-be-deployed technologies of C-DOT.

For rollout of MAX-NG technology in the BSNL network, core network equipment has been supplied and installed at site and AT (Acceptance Testing) for its commissioning is going on. The technology manufacturer has been geared up for manufacture and supply of access equipment for migrating 1000 exchanges catering to complete north and east zone across 16 LSAs (Licensed Service Area). Similarly, in the MTNL network, IMS-compliant NGN (Next Generation Network) trial network has been set up. AT for IMS-compliant NGN core has been completed and is going on for access equipment – copper access node for migrating 1000 landline connections of legacy PSTN technologies to C-DOT's IMS-compliant NGN technology. Besides, IP-TAX functionality, solution for tele-caller and Centrex feature, has also been integrated with the NGN network and is in commercial operation. Traditional IN services in the MTNL network have also been migrated to NGN-IN platform and its AT has been completed.

Regular technical support is also being provided for field issues, manufacturing support for optical technology (GPON in NOFN), and deployment of BroadBand Wireless Terminals (BBWT), and NMS (Network Management System) in NOFN. Field support for commissioning SDCN in the field is also being provided.

Enabling technologies and telecom networks

Feasibility study/ PoC/ prototype development has been completed for the following new/ green-field areas in telecom enabling technologies and networks:

- Study of active antenna design for 4G Base Stations and mm waves for 5G Base Stations
- Prototype implementation for test automation framework
- Study of Green power supply system
- Study of M2M communication, etc.

Process improvement

After design, implementation, refinement and stabilisation of High Maturity (CMMI level 4 and 5) processes, the organisation was successfully appraised at CMMI Maturity Level 5. The process practices at all levels are being sustained and are being internally audited regularly.

Business promotion

On the occasion of 'Good Governance Day' observed by the Government on December 25, 2014, C-DOT dedicated its two citizen-friendly technologies, namely, Gyan Setu and MAX-NG to the nation. These technologies were transferred to ECIL (Electronics Corporation of India Limited) for mass manufacturing and deployment of the equipment and will prove to be the stepping stones towards taking the benefits of internet services to the masses of the country. On this occasion, C-DOT also exhibited its current set of products at Manekshaw Centre, Delhi, and more than 125 visitors from Government, Defence and private sectors visited the C-DOT stall. Online real-time demonstrations of the products were made.

C-DOT also participated in a number of conferences and exhibitions, namely, Israel Innovation Conference, MXIiii 2014 (May 20-22, 2014) at Tel Aviv, Israel, 5th Strategic Electronics Summit 2014 (SES 2014) – Defence and Aerospace (July 30-31, 2014) by ELCINA at Bangalore, DEFTRONICS-2014 (September 23-25, 2014) at Bangalore, Defcom 2014 (November 17-18, 2014) at Manekshaw Centre, Delhi, Vibrant Gujarat Summit 2015 (January 7-13, 2015) at Gandhinagar, Gujarat, and Convergence India 2015 (January 21-23, 2015) at Pragati Maidan, Delhi. State-of-the-art C-DOT technologies had been showcased in these exhibitions.

C-DOT launched India's first indigenous Terabit Router, which addresses the needs of service providers for next generation core network for data centre, at the TSDSI function held at C-DOT campus on October 14, 2014. Hon'ble Minister of Communications & IT, Shri Ravi Shankar Prasad inaugurated C-DOT's Terabit Router along with GPON based Fibre-to-the-Desk (FTTD) solution.

C-DOT hosted IEEE International Conference on Advanced Networks and Telecommunication Systems (ANTS) during December 14-17, 2014, at C-DOT Delhi – inaugurated by Hon'ble Minister of Communication & IT, Shri Ravi Shankar Prasad, at C-DOT campus.

C-DOT invited over 100 NGOs across south India working in ICT areas for the workshop on Reach the unreached: ICT as a facilitator, to promote Gyan Setu. The event was held at C-DOT Campus, Bangalore on January 9, 2015. The occasion was graced by C-DOT's founder Executive Director, Shri G B Meemamsi.

Following are the major accomplishments during this period:

- Fault localisation demonstrated in the fibre network for NOFN project,
- Supply order received for consultancy services to Indian Navy,
- C-DOT Softswitch trial completed for AFNet in AFNIC, Palam, New Delhi,
- C-DOT GPON technology field trials successfully completed for Indian Army at Military College of Telecommunication Engineering (MCTE), Mhow, Indore and for Indian Navy on board naval ship at Mumbai,
- PoC and demo of BBWT and Wi-Fi for public places/ municipalities at MTNL, Mumbai, of BBWT for CABS (Centre for Airborne System), DRDO, Bangalore, and demo and PoC of BBWT and Gyan Setu at Sidhlaghatta *grampanchayat* block for BBNL completed,
- Bid submitted by BEL and ECIL for C-DOT Level2 switch in AFNET tender,
- LAN upgradation completed in TEC headquarters, DoT, using C-DOT Routers,
- DoT entrusted a project to C-DOT to examine data collection options from BTS for carbon foot print monitoring with a possibility to extend the work on pan-India basis, and PoC at one site has been demonstrated,
- C-DOT technology solutions, applications, techno-commercial proposals submitted to various Government agencies – for LEMF and integration with CMS to state police departments, like, Punjab Police, UP Police and Bhopal Police, Distress Caller Location Finding application to Delhi Police, CABSEC (Cabinet Secretariat) WAN expansion plan to BEL, IP-MLLN, BBWT, Wi-Fi for public places/ municipalities to MTNL Mumbai, SG-RAN to DoT GSM BSS security project and IISc, BBWT, DRAX in *grampanchayat*s of NOFN project at Sidhlaghatta block, etc.
- Discussions are going on with DRDL (Defence Research and Development Laboratory), Hyderabad, for radio-on-the-move.

ToT agreements, MoUs, project agreements

During this period, various agreements, namely, ToT agreements, MoUs, and project agreements were signed with prospective PSUs, and manufacturers for technology implementations, manufacturing, customised development. The details are as given below.

ToT agreements

Technology	No. of licenses	Manufacturers	ToT status
GPON	6	HFCL, UTL, VMC, ITI, BEL, RHPL	Progressively completed for various GPON variants
	6	L&T, Coral, ECIL, VMC, HFCL, BEL	Under advanced stage of discussion
MAX-NG	1	ECIL	Completed
	3	BEL, ITI, IL	Under advanced stage of discussion
BBWT	1	ECIL	Completed
	9	Coral, HFCL, VMC, BEL, ITI, Asmaitha, Digital Circuits, Innovation Communication	Under advanced stage of discussion
Terabit Router (TBR)	1	ECIL	Completed
	1	BEL	Completed
Layer2 switch	1	BEL	Completed
	1	ECIL	Under advanced stage of discussion
DRAX (Gyan Setu)	1	ECIL	Completed
	3	HFCL, L&T, VMC	Under advanced stage of discussion

MoUs and project agreements

S.No.	Strategic partner	Purpose
1	Bharat Broadband Network Ltd (BBNL)	C-DOT's customised NMS for pan-India rollout of the NOFN
2		Implementation of telecommunication Geo-Intelligence solution for survey report analysis and GPON planning for NOFN
3	Bharat Electronics Ltd (BEL)	Requirements of NFS tenders of BSNL for Indian Army and Navy
4	Electronics Corporation of India Ltd (ECIL)	Requirements of NFS tenders of BSNL for Army and Navy, and AFNET tender of Air Headquarters
5	Bharat Sanchar Nigam Ltd (BSNL)	Technical field support in BSNL network
6	Indian Navy	Consultancy services to the Indian Navy in designing the data network for their new generations of platforms.
46 Non-Disclosure Agreements (NDA) were also signed, covering exchange of confidential information related to joint development projects, outsourced components, transfer-of- technology and participation in tenders.		

IPRs, paper presentations and publications

Intellectual property asset	Number	Related project/product	Subject invention
Patent filed	3	DRAX	1. Gesture-based human-machine interface using marker
		MLLN	2. Communication system for managing leased line network and a method thereof (in USA, UK, China, Canada) 3. Communication system for managing leased line network with wireless fallback (in USA, UK, China, Canada)
Patent granted	3	All products: tool for rework in assembly	1. Heat sink adapter removal tool for Ball Grid arrays
		ATM	2. ATM switch
		STB	3. Interoperability of Set Top Box through Smart Card (USA)
Design filed	1	GPON (Titli Damak)	1. Electronic equipment for USB charging and holding portable communication devices
Design granted	3	GPON	1. Enclosure for cable management
		MAX-NG	2. Line Access Gateway chassis
		WiPS	3. Tablet PC
Trademark under filing	8	GPON	Chatur Damini, Mudrika Damak, Lok Damak, Titli Damak, Samay Damak, Sampark Damak, Damini NET
	1	Multiple products having RF amplifiers	HERA
Papers presented in the national and international conferences and seminars	8	Geo-intelligence	1. 'Geo-intelligence based terrain-aware mobile backhaul planning for rural India' – paper ID 1570023207, Conference – IEEE ANTS, Dec 14-17 2014, New Delhi, India
			2. 'Geo-intelligence based carbon footprint monitoring and prediction of suitable renewable energy technology system for mobile towers' – paper ID 1570022809, Conference – IEEE ANTS, Dec 14-17 2014, New Delhi, India

Intellectual property asset	Number	Related project/product	Subject invention
		Gyan Setu	3. Paper on 'A comprehensive review of embedded system design aspects for rural application platform', Volume 106 – Number 11, 2014, International Journal of Computer Applications
		General technical	4. 'New reservation multi-access protocols for underwater wireless ad hoc sensor networks' – IEEE Journal of Oceanic Engineering, Digital Object Identifier 10.1109/JOE.2014.2313996
			5. 'On the TDMA with imprecise propagation delay information' – Conference – IEEE ANTS, Dec 14-17 2014, New Delhi, India
			6. 'New, effective and efficient dimming and modulation technique for visible light communication' – IEEE 79th Vehicular Technology Conference (VTC Spring), Seoul, South Korea, 18–21 May 2014
			7. 'Cloud computing and e-Health' – TOLIC Tech. Articles Comp. 20.08.14
			8. Solar energy – A thought-provoking idea – TOLIC Tech. Articles Comp. 20.08.14.
Papers submitted and reviewed	2	Geo-intelligence	'Geo-intelligence based fibre fault optimisation system for rural India', IEEE International Conference on Industrial Instrumentation and Control (ICIC 2015) to be presented at Pune, 28-30 May 2015, India
		Gyan Setu	A paper on 'Efficacy of numeric keypad for computer illiterate in rural ICT', Journal of Computer Science – under review

Campus infrastructure

Construction activity commencement is awaiting statutory approval.

Annexure –U
Ref:6.2 (i)

TELECOM DISPUTES SETTLEMENT & APPELLATE TRIBUNAL
Performance for the year 2014-15

(Rs in Crore)

Sl. No.	Name of Scheme/ Programme	Objective/Outcome	Outlay 2014-15 Plan Budget (R.E.)	Quantifiable Deliverables/ Physical Outputs	Processes/ Timelines	Achievements w.r.t Col (5) as on 31-03-2015	Remarks /Risk Factors
1	2	3	4	5	6	7	8
1	Upgradation of TDSAT Reference Library	Purchase of books and other related materials to strengthen the refrence Library.	0.06	Purchase of books and other related materials to strengthen the Library.	On going activity	Purchase of books and hardware/Software for upgradation of reference library	
2	Study tours for familiarising with the telecom regulatory environment/Training	Study tour by Hon'ble Chairperson & Members to various countries and training of officers of TDSAT on various subject on telecom regulation including dispute settlement.	0.64	Study tour by Hon'ble Chairperson & Members to various countries and training of officers of TDSAT on various subject on telecom regulation including dispute settlement.	On going activity	The Study tour of Senior officers of TDSAT to Shanghai, China, Stockholm, Sweden and Geneva, Switzerland were undertaken to hold meetings with various regulatory authorities and to study the telecom and broadcasting regulatory environment including settlement of disputes in these countries.	

3	Holding of Seminars on Telecom Disputes & Settlement.	Holding of domestic seminars on Telecom Disputes & Settlement in four cities in the country	0.30	Holding of domestic seminars on Telecom Disputes & Settlement in four cities in the country.	On going activity	Seminar held at Gangtok, Hyderabad and Amritsar have helped in generating awareness amongst stake holders about dispute settlement in telecom and broadcasting sector.	
		TOTAL =	**1.00**				

Contd-

Annexure –U

TELECOM DISPUTES SETTLEMENT & APPELLATE TRIBUNAL
Performance for the year 2015-16

(Rs in Crore)

Sl.No.	Name of Scheme/ Programme	Objective/Outcome	Outlay 2015-16 (B.E.)	Quantifiable Deliverables Physical Outputs	Processes/ Timelines	Achievements w.r.t Col (5) as on 31-12-2015	Remarks /Risk Factors
1	2	3	4	5	6	7	8
1	Upgradation of TDSAT Reference Library	Purchase of books to strengthen the Library.	0.10	Purchase of books to strengthen the reference library	Ongoing activity	Purchase of books and hardware/Software for upgradation of reference library	Reason for short fall :-Post of one Member lying vacant from 29/07/2011 to 11/05/2015. The Post of Director lying vacant from 18/09/2013 to 19/08/2015. The posts of Registrar, Joint advisor are also lying vacant during the current year inspite of efforts to fill their up till date.
2	Study tours for familiarising with the telecom regulatory environment/Training	Study tour by Hon'ble Chairperson & Members to various countries and training of officers of TDSAT on various subject on telecom regulation including dispute settlement.	1.00	Study tour by Hon'ble Chairperson & Members to various countries and training of officers of TDSAT on various subject on telecom regulation including dispute settlement.	Ongoing activity-	The Study tour of Senior officers of TDSAT to Geneva, Switzerland and Shanghai, China were undertaken to hold meetings with various regulatory authorities and to study the telecom and broadcasting regulatory environment including settlement of disputes in these countries.	

3	Holding of Seminars on Telecom Disputes & Settlement.	Holding of domestic seminars on Telecom Disputes & Settlement in three cities in the country	0.45	Holding of domestic seminars on Telecom Disputes & Settlement in three cities in the country	Ongoing activity	Seminar held at Nainital and Goa have helped in generating awareness amongst stake holders about dispute settlement in telecom and broadcasting sector	
		TOTAL =	**1.55**				

Annexure – V
Ref:6.2(ii)

CENTRE FOR DEVELOPMENT OF TELEMATICS
Performance for the year 2015-16

(Rs in Crore)

Annual Plan (2015-16)										
Name of the Ministry/Department : Center for Development of Telematics (C-DOT)										
Statement of Outlays and Outcomes / Target for FY 2016-17										
										(Rs.(in crores)
Sl. No.	**Name of scheme / programme**	**Objective/ Outcome**	**Outlay 2015-16 (Proposed)**			**Quantifiable Deliverables/ Physical output of the project**	**Projected Outcome for the FY 2015-16**	**Process/ Timelines for the FY 2015-16**		**Remarks / Risk factors**
1	**2**	**3**	**4**							
			4(i)	**4(ii)**	**4(iii)**					
			Non Plan Budget	**Plan budget**	**Complimentary extra budgetary Resources**					
1	Communication security & research monitoring (CMS)	Progressively scaled up infrastructure creation for CMS national rollout.		177.18		Centralized Monitoring System (CMS) - Implementation & Roll-out in the field : RMCs, ISFs, ILDs, Data Center, Transitory DR infrastructure and related IT equipment	CMS implementation & pan India roll-out •Data Centre build and DR site build up to requisite capacity. •Main CMC infrastructure installation with up to requisite capacity enabling CMS setup to monitor and intercept voice and	Q1	•Pilot CMC- DR at Delhi • Installation of 3 ILDs in CMS network	• DR Functionality lab tested in minimum configuration •Completed
								Q1 & Q2	Installation and integration of RMCs in 12 LSAs and their corresponding TSPs	• Ongoing - RMCs installation completed in 14 LSAs, Pilot RMCs' migration to field RMCs pending due to non-availability of resources at the respective RMC.
								Q2	Operationalization of 3 ILDs in CMS network	Completed
								Q3	Operationalization of 9 LSAs in CMS network	Likely to be completed by end of Q4
								Q4	CMC-DR infrastructure up to 30% capacity	• Tender for Data cente build for DR build, released 7 technical evaluation in-progress. • Preparation in-progress for release of tenmder for

							data from TSPs in 21 LSAs and 10 ILDs.			DR infrastructure.
2	Broadband Technologies	Design, Development of a high capacity (terabit) router technology.		18.94		•Commercial grade multi terabit Router.	Multi-Terabit Router system with security features	Q1	Design & implementation of fault tolerant multi-terabit router - hardware implementation	•Completed
								Q2	•Design & implementation of fault tolerant multi-terabit router for software porting on multi-terabit hardware. • Multi-terabit router integration testing • Design of security applications over multi-terabit router.	• Hardware, about 90% complte, Software porting ongoing - activity likely to complete by end of Q3. (Hardware availability delayed due to other projects' hardware assembly given higher priority]. • Module level testing ongoing; activity likely to compete by end of Q4. • Design completed, implementation ongoing; activity likely to complete by end of Q4.
								Q3	• Lab validation of fault tolerant multi-terabit router. • Commencement of system validation • Pilot trial of fault tolerant multi-Terabit Router •System integration with security applications and testing	• Internal validation expected to commence by end of Q4.

								Q4	• Commencement of system (integrated with security applications) validation (internal). • Commencement of pilot /field trial of multi-Terabit Router with built-in security applications.	• Pilot trial of multi-terabit routerr (with security applications) will planned in the FY 2016-17
3	Next generation mobile technology	To focus on Research & Development efforts on emerging Wireless Technologies for broadband Networks - 4G Technology.		23.95		4G Wireless Development				
3(a)	LTE-A	Design & development of Femto eNodeB base station and the corresponding Evolved Packet Core (EPC).		23.95		• Femtto eNodeB system development • LTE macro base station development • Evolved Packet Core (EPC) development.	•Technology commercialization of Femto LTE system in FDD and TDD bands. • Pilot tiral of LTE system in TDD band integrated with RRH, control modules - RRM, SON and OAM.	Q1	• Development of RRM, SON nand OAM. •Commencement of pilot trial of LTE system	• RRM, OAM developedn and offered for internal testing; completed in Q2, delay in milestone completion due to RRM design complexities as well as implementing additional functionalities in OAM. • Delay due to trial system not built on account of non availability of sufficient components. Further, efforts still ongoing for getting site.
								Q2	•ToT of Femto LTE system in FDD band	• ToT package ready, efforts ongoing for manufacturing tie-up for technology transfer.

								Q3	•Development of RRH in TDD and FDD band. • Development of EMS for eNodeB and core network elements. • Development of LTE Macro system	• RRH development likely to be completed towards end of Q4 •
								Q4	• Integration off Macro eNodeB with RRH • Implementation of NMS for eNodeB and core Network elements • Integration of RRM, SON and OAM with Femto eNodeB • ToT of Femto LTE system in TDD band	• NMS for Nodeb & core network elements expected to completed by end of Q4 • Activities for macro eNodeB & its integration with RRH likely to be planned for FY 2016-16 • ToT process for fmto LTE system in TDD band liely to start towards end of Q4. •
4	Carrier networks' transport technology	To focus on research & development of optical access aggregation system (OAAS)& optical core networks (OCN)		29.24		Next Generation PON (NG-PON) & DWDM-based core network				

4(a)	Optical Access & Aggregation system (OAAS)	Development of next generation PON technology		13.64		• 32G PON system : WDAN (WDM- based technology) • 10G GPON system : X-GPON (TDM-based technology)	Pilot / Field trial for: • 32G PON WDAN system comprising of OLT and ONT, including support for AES-128 encryption. • X-GPON OLT prototype	Q1	Commencement of pilot trail for WDAN System (32G-PON)	Discussion ongoing with BBNL / Navy for pilot trial.
								Q2	• X-GPON OLT (prototype) development and implementation (including integration and testing completion.	Completed.
								Q3	• X-GPON OLT (prototype) validation completion. • X-GPON OLT system with bought-out ONT pilot trial commencement. • ONT with enhanced uplink redundancy for backhaul application.	
								Q4	Support for AES - 128 in WDAN OLT and ONT.	• Design in-progress 7 likely to be completed by end of Q4
4(b)	Optical Core Network (OCN)	Development of 40G / 100G DWDM Optical Network System		15.60		• Terminal Equipment (TE) • ILAs (In Line Amplifiers) • ROADMs (Reconfigurable Optical Aaa-Drop Multiplexer)	Readiness of complete DWDM system, supporting 100G and 40G line rates for pilot and field trial.	Q1	DWDM EMS study and SRS finalization	•Completed
								Q2	• Hardware and Software development completion for terminal equipment with 40G mux-ponder. • DWDM EMS architecture and design.	• Development completed. Final integration testing in last lap. • Completed.

								Q3	• HW & SW development completion for TE (with 40G Muxponder) with ILA design and ROADM design. • DWDM EMS development and testing.	• ILA hardware & software development completed; testing in-progress fof ROADM • EMS development ongoing •
								Q4	DWDM EMS v1.0.0 Release	• EMS releases is as per the time-line
5	Secure wireless & wire-line networks	Tto focus on research and developme nt for setting up a secure mobile communica tion networking using standard wireless technologie s such as 3G, WiFi.		5.60		• Design and development of secure phone & tablet.	• Tablet (ver.v2) • Launch of WiPS services for end users	Q1 - 2	• Completion of packaging for end-user devices - Tablet (ver.v2) •	• Completed
								Q3	• Release if final version of end user devices – secure tablet (ver. V2) • Integgration testing of WiPS services with SDCN and launh of WiPS services for end users (phase 2 deliverable).	• Tablet design & development ongoing & likely to completed by end of Q4 • Activities for integration testiung of WiPS services with SDCN network may likel;y to commence in Q4 .
6	Power Efficient & Green Telecom Technolog ies	To develop an alternate power supply system based on Green Technologi es specificatio n for mobile towers (BTS) and also to supply		5.74		• Green power supply system for specified C-DOT products including Solar, Wind and Hybrid technologies monitoring the power consumption of various telecom equipments.	Field trial and ToT for Green Power Supply system with rated solar input power of 75W and 2000W for various equipments	Q1	• Requiement specifications finalization for 2000W DESIGN	• Completed
								Q2	• Architecture finalization off 2000W system • Field trial of 75W system • ToT for 75W system	• Completed • Integration testing ongoing with ONT and field trial likely to start towards end of Q3. • ToT documentation completed and process initiated; TOT likely to commence in Q4.
								Q3	Deisgn, implementation and testing of 2000W Green Power Supply System	• In-progress

		power to current and future products developed in C-DOT.						Q4	• Documentation, validation and field trial of 2000W Green Power Supply System • ToT for 2000 W system	• Activities ongoing as per the time-line
7	Satellite based technology	To develop a satellite hub baseband system with connectivity to terrestrial networks based on prospective client organization's requirement		11.79		Satellite hub baseband system consisting of • Modulators • Demodulators • Switching subsystem • Terrestrial network interface gateway	• Prototype hub tested with terminals and satelliate. • Enhanced satellite hub baseband sub-system	Q1 - Q2	• Testing of prototype hub baseband system	Completed
								Q3	• Enhanced carrier grade, fully redundant hub	• Architecture finalized for carrier-grade satellite hub
								Q4	• Integration and testing support with satellite	• Activities will be as per the time-line.
8	Next Generation security for telecom & data networks	To align development so that present CMS implementation with seamless assimilation of advance functionalities and capabilities evolve to		17.49		Advance Intelligent Monitoring System (AIMS) for CMS archiitecture scaling up & interception solution for new technology, e.g. LTE, IP-TV, IMS converged &	• New CMS sofware release supporting featurea like EMS for NGN LIS, end-to-end workflow, integrated ISP solution, indigenous probe support (32 E1 at ISF),	Q1	• Design and development of interception solution for new technologies like IMS-compliant FMCP, Ipv6 support for interception.• Study of basic AI techniques in data intelligence.• NMS enhancements for: • RHEL11 64 bit release with MYSQL for CMS-NMS (CMSNMS v5.0.0) • Alarms synchronization design with various servers for missing alarms	• Completed • Completed• Completed• Completed

		new framework/ architecture to address the upcoming security challenges of the evolving networks.				fixed mobile, etc.	CMS SW scaling up, enhanced application security, NMS enhancements, IMS LIS, LTE LIS.• Readiness of CMS DR solution for rollout. • Advanced IM support functionalities like AI in call data, analysis on PSTN and CDMA CDRs.	Q2	• Fedora 64 bit release with MYSQL for CMS-NMS (CMSNMS v5.0.0) • Bug-fix release over CMSNMS V5.0.0 (CMSNMS v5.0.1) • 32E1 NGTK card support for ISF & EMS commands enhancements • System information display per server-wise [like OS, mYsQL, SNMP versions, MAC address, etc.] • EMS for NGN LIS • CMS enhancements - end-to-end workflow optmization • Prototype with basic AI techniques in call data • Enhancements in analysis for PSTN and CDMA CDRs • Geo Spatial enhancements - "Geo-Spatial Service for Mobile Tower Selection" for Advanced Intelligent Manager • Integration of ISP monitoring solution with integration of solutions from NTRO & CAIR (subject to ISP solution availability crom CAIR)	• Completed • Completed • Completed • Completed • Completed • Completed • Completed • Completed • Ongoing, will be completed by December 2015 • ISP integraiton - completed. • NTRO - on hold

								Q3	• CMS technology enhancement and migration to new architecture: • Indigenous probe to support higher traffic • Scaling-up CMS SW • Application security enhancement • IMS LIS development • SDR formats of various TSPs, CDMA, PSTN CDR, cell data, enhancements in CMS IM and standalone IM for different TSPs • Customization in data collection module interfacing for TSPs • NMS enhancements for CMS: • PM for DCN equipment (CMSNMS v6.0.0) • GUI enhancements to support LTE, IPLC and ISP • Bug fixes and reports • Enhancements release (CMSNMS v6.0.1)	• Activities ongoing as per schedule and expected to be completed by end of Q3.
								Q4	• DC DR configuration trials in lab setup • Latest Firefox support in GUI • Validation of SDR formats of various TSPs, CDMA, PSTN CDR, cell data, enhancements in CMS IM and astandalone IM for different TSPs • IM SW with basic AI techniques in call data intelligence	• Activities expected be completed as per schedule.

9	Enabling technologies & telecom networks	This scheme helps C-DoT tomaintain its position ofexcellence in R&D, byconducting basic research aswell as conducting studiesand setting up pilots innew/green field areas inTelecom Enablingtechnologies & Networks.		29.29		Projects related tofeasibility study / Proof ofconcept and setting uppilots in new / green fieldareas in telecom enablingtechnologies andnetworks.	•Feasibility study report • Prototype	Q1 - Q4	• Feasibility studies on the following subject technology areas are planned during the year:• M2M communiction with one application;• Prototype implementation of Digital Doherty;• Controller system;• White Space Radio;• 100-T Router;• Network optimization radio access network;• Open Intelligence• Cellular traffic offload using Wi-Fi	• Ongoing

10	Enhancements / New Features / upgradation / adaptation / technical support for developed technologies	To focus on Research & Development efforts on enhancements, upgrade, update, evolution, feature addition, scalability, value addition and customization of developed technologies to meet changing requirements.		129.78		Enhancement / Upgradations / support for :IMS, Optical technologies, SDCN, NMS and Field / pilot trials to prove the viability of the developed technologies				
10a	Design support for developed technologies	To provide enhancements, upgradations, bug-fixes, solutions for component obsolescence and field support for the technologies developed and deployed in the network with new set of features or		26.91		Product enhancements, support against obsolescence and field support	To provide enhancements, upgradations, bug-fixes, solutions for component obsolescence and field support for the technologies developed and deployed in the network with new set of features of migration, scalability and trials of	Q1 - Q4	Design support for value engineering/ design enhancements to address field and manufacturing issues to be provided for: • IMS, SDCN • Optical technology - GPON, MOES, etc. • 24x7 support for existing systems in the field, support for migration to MAX-NG technology, support for NGN technology, deployment in the MTNL network. • Field support for PoC/demo etc. for various other technologies / applications.	Ongoing to address component obsolescence, bug-fixes, technology upgradation, etc.

		migration, scalability and trials of newly developed technologies					newly developed technologies.			
10b	Technology field implementations and roll-outs	Roll-out off technologies that have been successfully field tried and accepted in telecom network		102.87		Technologies planned for rollout / implementation caters to the requirements of BSNL, MTNL, BBNL, Defence, etc.		Q1 - Q4	1. MAX-NG roll-out in the BSNL network2. IMS and toll-free service in MTNL network3. ISP Monitoring implementation and support4. Geo-intelligence & tech. planning for NOFN5. VoIP-based secure network system6. Router trials & enhancements7. Consultancy for Naval Data	1. Acceptance testing ongoing for core; NMS installd for NOC operation and testing ongoing.2. TAX functionality integrated into NGN network; completed NGN core and copper access node in Delhi & Mumbai for 1000 subscribers; MTNL TFS migrated on C-DOT NGN-IN platform.3. Enhancements/upgradation in the field:• NOFN NMS integrated with DCN link status monitoring system, DCN NMS development completed for data centre monitoring, its integration with vendor specific mibs ongoing; NOFN NMS customization completed, load testing for 1 lakh GPs awaits HW availability, etc.• NOFN NMS data centre DR set-up - equipment installation ongoing at Bangalore.4. Activities ongoing as scheduled - Survey report analysis covering 1.30 lakhs Gram Panchayats completed; activities ongoing for balance States; Digital road data corrections, coverage

										enhancements up to GPs, etc. for 15 States. Fibre Fault Localization System successfully field tried in NCR Delhi.5. Hardware design and implementation for various sub-systems - DSLAM, Router, VoIP Phone, EEB completed; activities ongoing for - customization of EMS, Softswitch, hW assembly, testing and SW porting, etc. (likely to be completed by Q3).6. Ongoing - being tried in Defence Network.7. PoC for Naval Data Network has been demonstrated.
11	Campus Infrastructure	Construction of residential facilities for CDOTians within the Delhi campus area, to facilitate flexible working hours conducive for R&D culture.		2.00		Construction of dwelling & Hostel facilities for C-DOT staff & Project Board	Finalization of tender, invitation of tender bids,award of work for residential complex	Q1 to Q4	Finalization of tender, invitation of tender bid & award of work.	Commencement of construction activity is subject to obtaining statutory approvals (being awaited)
	TOTAL			**451.00**						