GOVERNMENT OF INDIA

OUTCOME BUDGET

2014-2015

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(3)/E.Cord/2012 dated 1st January, 2013, OUTCOME BUDGET 2014-15 will broadly indicate the physical dimensions of the financial budgets as also the actual physical performance in 2012-13, performance for the year (2012-13) and the targeted performance during 2013-14. In pursuance to the instructions issued by Ministry of Finance, Outcome Budget 2014-15 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 75.23 per cent in 2014. The expansion has been led by private sector service providers whose market share (in terms of number of connections) increased in this period from 73.5 per cent to 87.13 per cent.Today, India's 933.01 million (including 904.51 million of wireless telephony) strong telephone network is the second largest wireless network in the world. 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 75.23% at the end of March 2014. The target of 500 million connections by December 2010 has already been achieved by September 2009. 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 2014-15 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
[3] Wireless Monitoring Organization
[4] Telecommunication Engineering Centre
[5] Telecom Regulatory Authority of India

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 2014-15 and the physical targets for 2014-15. 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 2012-13, 2013-14 and 2014-2015 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.

[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 Fund (USF)
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%

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:** 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.

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 licences and maintenance and renewal of PBGs of all standalone licences.

iv. **Verification of Deductions**: As per the license agreement, licensees claim deductions to calculate license 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 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 on the basis of the recommendations of the TRAI came into effect from 1.4.2002. The scope of the Universal Service Obligation (USO) includes public access through VPTs[9], RCPs[10], as well as provision of rural household telephones (RDELs) in the identified net high cost rural/remote areas. 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, USF are as follows:

i. Implementation of the guidelines laid down by Government for providing Universal Service Support;
ii. Enter into Agreement with the Universal Service Providers for the purposes of implementation of Universal Service Obligation.
iii. Suggesting such changes in policy as may be deemed necessary for implementation of Universal Service Support;
iv. Forecasting the requirement of Universal Service Funds for each financial year and obtaining approval of Government through Department of Telecom; and
v. Ensuring that the prescribed Universal Service Levy is credited to the appropriate Universal Service Fund on a regular basis.

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 licence fee, except for pure Value Added Service Providers, Voice Mail, e-mail and Internet Service Providers, 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

[9] Village Public Telephones
[10] Rural Community Phones

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 2014-15

The Outcome Budget 2014-15 has been prepared for the schemes/programmes coming under Plan. The Outcome Budget 2014-15 prepared for the Department of Telecommunication includes the following:

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.

1. Public Access

i) Village Public Telephones

As on 31.01.2014, 582342 out of the 593601 inhabited villages (i.e. 98.10%) 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 newly 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. Rollout period for the scheme is up to 31 March 2014. It is likely to be extended up to 31 March 2015.

ii) Provisioning of VPTs under Bharat Nirman – I

Agreements were signed with BSNL in November 2004 to provide subsidy support for provision of VPTs in 62,302 uncovered villages in the country excluding those villages having population less than 100, those lying in deep forests and those affected with insurgency.

The provision of VPTs in these villages has been included as one of activities under Bharat Nirman Programme. 62101 VPTs have been provided under this scheme till the closure of rollout period on 31.08.2012. Validity of the Agreements for the Scheme has also expired on 09.11.2012.

Remaining villages of the scheme would be provided with VPT facility under USOF scheme of VPTs in Newly Identified uncovered villages as per Census 2001.

2. Shared Mobile Infrastructure Scheme:

A Scheme has been launched by USO Fund to provide subsidy support for setting up and managing 7353 infrastructure sites/ towers in 500 districts spread over 27 states for provision of mobile services in the specified rural and remote areas, where there was no existing fixed wireless or mobile coverage. Villages or cluster of Villages having population of 2000 or more and not having mobile coverage were taken into consideration for installation of the tower under this scheme. The agreements effective from 01.06.2007 were signed with the successful bidders in May 2007, which were valid till November, 2013.
Status:

As on 30.11.2013 i.e. till the closure of the scheme, 7317 towers i.e. about 99.51% have been set up. The infrastructure so created is being shared by three service providers for provision of mobile services. 16254 BTSs (Base Transceiver Stations) have been commissioned by Service Providers at these towers for provisioning of mobile services.

3. Wireline Broadband Scheme:

USOF has signed an Agreement with BSNL on January 20, 2009 under this Scheme which was launched to provide wire-line broadband connectivity to rural & remote areas by leveraging the existing rural exchange infrastructure and copper wire-line network. This scheme is being implemented at pan-India level. The objective is to make the rural and remote areas broadband enabled by facilitating the service providers in creating Broadband infrastructure. The speed of each of the broadband connections shall be at least 512 kbps always on, with the capability to deliver data, voice and video services in the fixed mode. The rural broadband connectivity will cover Institutional Users, such as Gram Panchayats, Higher Secondary Schools and Public Health Centres, as well as Individual Users, and located in the villages.

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 5-years, i.e., by 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. 1500 crore in 5 years' time that includes subsidy for about 9 lakh broadband connections, CPEs, computers/computing devices and Kiosks.
Under this scheme, as of March 2014, a total of 5,89,783 broadband connections and 14294 kiosks have been provided.

4. Optical Fibre Network Augmentation, Creation and Management of Intra-District SDHQ-DHQ OFC Network in service area of ASSAM

This Scheme has been launched to provide sufficient back-haul capacity to integrate the voice and data traffic from the access network in the rural areas to their core network by strengthening the OFC network. This scheme considers OFC Network augmentation between the blocks' HQ and Districts' HQ to begin with.

USOF, through this Scheme, shall provide subsidy support for augmentation, creation and management of intra-district SDHQ-DHQ OFC Network on the condition that it will be shared with other Telecom Operators at the rates prescribed in the Agreement. Assam has been taken up first for implementation. The tender for Assam was floated on 30.10.2009 and BSNL had been declared successful at the subsidy quote of Rs. 98.89 crore and subsequently, an Agreement has been signed with BSNL on 12.02.2010 to implement the scheme in Assam.

Salient Features of the Scheme: This OFC Scheme would be undertaken on BOO model, i.e. build, operate & own basis, and accordingly, BSNL would build, operate, own and manage all the equipment/infrastructure for the provisioned intra-district augmented/created OFC Transport network to connect 354 total locations in Assam in total 27 Districts.

All locations are to 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, in all districts of ASSAM within 18 months from the date of signing of the Agreement. The Agreement shall be valid for a period of seven 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.

As of November 2013, about 302 nodes have been installed (Out of 354) under the current scheme.

5. National Optical Fibre Network:

The optical fiber presently has predominantly reached state capitals, Districts and blocks and there is plan 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 laying incremental fiber wherever necessary. Size of the incremental network is Approx. 5,00,000 km. Dark fiber network thus created will be lit by appropriate technology thus creating sufficient bandwidth at GPs level. This will be called National Optical Fibre Network (NOFN). Thus prevailing connectivity gap between GPs and Blocks/Districts will be filled. Non-discriminatory access to the network will be provided to all the telecom service providers. Further the broadband connectivity to 2.5 lakh GPs for various applications like e-health, e-education and e-governance etc. will be provided by NOFN as closed user group. The network is proposed to be completed in 2 years' time. The project is being funded by Universal Service Obligation Fund (USOF). The project is being executed by a Special Purpose Vehicle (SPV) Bharat Broadband Network Limited which is a company incorporated under Indian Companies Act 1956 and initially will be fully owned by Central Government, with equity participation from Government and interested Central Public Sector Units (CPSUs) (BSNL, Railtel, Powergrid, GAILTEL, etc.). Tri-partite MoU for free RoW has been signed for all States & UTs except Tamilnadu and Lakshadweep. Consent is awaited from Tamilnadu and Lakshadweep. The work of NOFN has been distributed among 3 CPSUs viz BSNL, Railtel and PGCIL. BBNL& 3 CPSUs have already started the field survey & tender work. Work is likely to commence shortly.

Planned/New/ Forthcoming Schemes

1. Optical Fibre Network Augmentation, Creation and Management of Intra-District SDHQ-DHQ OFC Network in service area of NE-I and NE-II"

The scheme has been launched in NE-I and NE-II service areas. Tenders have been floated and M/s Railtel Corporation has been selected as success bidder at a subsidy quote of Rs. 89.50 Cr. and Rs. 298.50 Cr. respectively. The agreements have been signed on 16.01.2012. The schemes have a roll out period of 24 months and 30 months respectively. The roll out is yet to start.

2. Scheme for Mobile Communication Services in Left Wing Extremism (LWE) affected Areas.

In its meeting held on 04. 06.2013, Union Cabinet approved a proposal to install mobile towers at 2199 locations identified by Ministry of Home Affairs (MHA) in 9 States (Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Maharashtra, Madhya Pradesh, Odisha, Uttar Pradesh and West Bengal), which are affected by Left Wing Extremism (LWE).
Work has been awarded to Bharat Sanchar Nigam Limited (BSNL). USOF would fund the CAPEX and OPEX net of revenue for five years. Estimated project cost is Rs. 3046.12 Crores. Installation and roll out in these areas is targeted to be completed in 12 months. Affordable mobile communication services will be available to the general public as well as security personnel in the identified areas.
BSNL had floated the tender on 14.08.2013. The tender was opened on 25.10.2013. BSNL submitted tender evaluation report dated 20.01.2014. The CAPEX and OPEX for 1836 towers discovered by BSNL through tender process is 21.72% higher than the estimated cost. In its meeting held on 27.03.2014, Telecom Commission Considered it and decided that the project for

1836 tower sites in Left Wing Extremism (LWE) affected areas may be retendered. BSNL has issued notice for retender on 07.04.2014.

3. Scheme for Mobile Communication Services in Uncovered Villages

As per the initial survey carried out by field units of DoT there are about 56,000 inhabited villages in the country which are yet to be connected with mobile communication services.

A scheme to extend financial support from USO Fund for provisioning of mobile Communication Services in inhabited uncovered villages of the country is under formulation.

USOF signed an MOU with C-DOT on 1st November, 2012 for preparation of mobile network to be used for benchmarking of USOF subsidy. C-DOT submitted report on 16.08.2013. A detailed project report will be prepared for seeking approval of the Cabinet. Villages in North East Region will be covered in first phase as part of Comprehensive Development Telecom Plan for North East.

4. **Comprehensive Telecom Plan for North-East:**

Based on the request of the Department of Telecom, Telecom Regulatory Authority (TRAI) issued Recommendations on "Improving Telecom Services in North –Eastern States: An Investment Plan", dated 26th September 2013. In its meeting held on 06.11.2013, the Telecom Commission accorded 'in principle' approval for implementation of a comprehensive telecom development plan for the North-Eastern Region (NER) to be funded by USOF, based on TRAI recommendations.

Main thrust areas identified for improvement and augmentation of telecom services in NER are:

1. To provide 2G (voice) mobile coverage in uncovered areas.
2. To provide seamless mobile coverage (2G voice) along the National Highways in NER,
3. To ensure reliability of and redundancy in the transmission network at State capitals and district headquarters in NER.

M/s Telecom Consultants India Limited (TCIL) has been entrusted with the work of preparation of Detailed Project Reports for the above components. Approval of the Cabinet will be sought in the current Financial Year.

5. Wireless Broadband Scheme – Phase I.

The USOF is working on a scheme for providing financial assistance by way of subsidy for the wireless broadband active infrastructure such as BTS, by utilizing the existing infrastructure available with the Telecom service providers. This scheme is being implemented at pan-India level.

This scheme would provide broadband coverage to about 5 lakh villages at a speed of 512 kbps. With the completion of the BWA and 3G Spectrum auction, the stage is set for the launch of the scheme. The draft tender has been put in public domain for comments from stakeholders. The comments have been received and are under examination.

The scheme has been put on hold due to conflict with rural roll out obligation of successful 3G/BWA bidders of spectrum auction in May 2010.

6. **Satellite Broadband connectivity in Rural & Remote Areas**

1. For provision of BB connectivity to 5000 identified villages which do not have any terrestrial connectivity.
2. Initially, 1200 villages as a pilot are envisaged to be provided broadband on this media @ 512 kbps
3. The technical consultant "C-DoT" submitted its report and the formulation of the scheme, is in progress.
4. The Scheme would be rolled out during the current Five Year Plan (2007-2012) with a subsidy outlay of about Rs.30 crore.

The subsidy for broadband connections would be distributed in the form of **12 Equated Quarterly Annual installments**, as follows:

1. Greenfield Institution with SPV backup :EQA-Rs. 43,476/-
2. Greenfield Institution with UPS :EQA-Rs. 36,048/-
3. Brownfield Institution with SPV backup :EQA-Rs. 36,776/-
4. Brownfield Institution with UPS :EQA-Rs. 28,818/

Institutional Brownfield connections without any power solution:Rs.27, 934/-

The district-wise subsidy, on an average, for Kiosks is as follows:

Brownfield Kiosk with UPS:

1) Maximum (Pakur in Jharkhand and Senapati in Manipur):Rs.33,837/-
2) Minimum (Few districts of Kerala and TN):Rs.28,935/-

Brownfield Kiosk with solar power:

1) Maximum (Pakur in Jharkhand and Senapati in Manipur):Rs.41,265/
2) Minimum (Few districts of Kerala and TN): Rs.35,287/-

Greenfield Kiosk with solar power:

1) Maximum (Pakur in Jharkhand and Senapati in Manipur):Rs.45,398/-
2) Minimum (Few districts of Kerala and TN):Rs.38,821/-

Greenfield Kiosk with UPS:

1) Maximum (Pakur in Jharkhand and Senapati in Manipur):Rs.37,970/-

2) Minimum (Few districts of Kerala and TN):Rs.32,469/-

7. Optical Fibre Network Augmentation, Creation and Management of Intra-District SDHQ-DHQ OFC Network in States other than Assam, NE-I and NE-II

Other than Assam, NE-I and NE-II (to start with West Bengal Circle which comprises the States of West Bengal and Sikkim) would be taken up subsequently in a phased manner.

BE 2014-15

In BE-2014-15, fund requirements have been assessed to be Rs. 14790 Cr. which includes provision for the ongoing as well as for new schemes. In BE 2014-15 the major component of funds i.e. Rs 13932 Crore and Rs 587.78 have been proposed for the scheme for creation of National Optical Fiber Network (NOFN) for Broadband connectivity to 2.50 lakh Village Panchayats of the Country and Mobile Communication Services in Left Wing Extremists affected areas (LWE) Project respectively. It is expected that in the financial year 2014-15, USOF Schemes would progress considerably and bring about a resultant positive impact on rural connectivity, teledensity and socio-economic progress. Rs. 3538 crore only has been earmarked for USOF schemes for the F/Y 2014-15 and therefore Annexure–II has been revised, accordingly.

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 ` 15.00 crore has been provided under the plan 2014-15 for the setting up of NGN Lab for testing and certification of transport equipment under NGN test bed and Outcome Budget[11] 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 2014-15 is ` 2.40 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[12] of WPC relates to the residual payments and the AMC being undertaken under this project.

[11] Refer Annexure-B
[12] Refer Annexure-C

2.4 Wireless Monitoring Organization (WMO)

The approved Plan Outlay for Wireless Monitoring Organization is ` 49.00 crore for the year 2014-15 and the Outcome Budget[13] 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 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 ` 260.00 crore has been approved for C-DOT during 2014-15 with ` 200.00 crore as budgetary support and ` 60.00 crore from the internal resources (IEBR) of C-DOT. The projects to be undertaken by C-DOT during 2014-15, which are part of the Outcome Budget[14] 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 ` 40.00 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[15] for TRAI pertains to the above parameters.

2.7 Telecom Disputes Settlement and Appellate Tribunal (TDSAT)

A sum of ` 1.55 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 ` 5132.19 crore from IEBR without GBS for the year 2014-15. The funds would be utilized for the provision of

[13] Refer Annexure-D
[14] Refer Annexure-E
[15] Refer Annexure-F

telecom services, internet & broadband facilities amongst other programmes given in the Outcome Budget[16].

2.9 Mahanagar Telephone Nigam Limited (MTNL)

The approved plan outlay of MTNL for the year 2014-15 is ` 808.46 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[17] 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 a token sum of ` 1.00 crore as budgetary support under plan for 2014-15[18].

2.11 DoT Projects

The total budgetary support of ` 7500.00 crores include provision for the following projects and the Outcome Budget[19] has been prepared accordingly.

(a) 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.

(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.

[16] Refer Annexure-H
[17] Refer Annexure-I
[18] Refer Annexure-J
[19] Refer Annexure-K

The 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 telephony and telephony has become inadequate due to the increasing demands of mobile services in the country. The work for Air Force network was started in 2006 and the network for Air Force has been dedicated to the nation by Air Force on 14.09.2010. The Army and Navy component of the network comprising of 219 and 33 sites respectively throughout the country has been started in 2010-11. As regards the laying for Army, Navy, and for backbone network, BSNL had floated the tender. While estimated cost of OFC was Rs. 2,000 crore, the tender cost came around Rs. 7500 crores. The issue of revision of cost for the project is being settled. 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 Systems (NMS), Security and Synchronization devices along with back up media on Microwave & Satellite for some strategic locations. The time line for implementation of the project is three years. An amount of Rs. 2425 crore was provided in BE 2013-14 and Rs. 350 crore in RE 2013-14 for Army and Navy network part of the project. Only Rs. 211 crore was actually released to BSNL as Indian Air Force recommended only 60% of the total amount of vouchers claimed by BSNL. An amount of Rs. 3065 crore has been provided in BE 2014-15 for Army and Navy network part of the project.

](c) 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 ` 8.00 crore has been made in BE 2014-15. 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.

  It is also proposed to introduce Mid-Career Training at suitable intervals for Group "B" and "C" of IP&TAFS from 2014-15 which would help in preparing them for next level competency expected on career progression and would aim at imparting 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) Inservice 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 ` 4.00 crore has been provisioned in BE 2014-15 for this purpose.

- **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 ` 3.00 crore has been allocated for this purpose in BE 2014-15.

(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. Pre-project activities like preparation of DPR, Repair of boundary wall and approach road etc. are going. A provision of ` 68.05 crore has been made for this purpose during 2014-15.

Annexure-A

UNIVERSAL SERVICE OBLIGATION FUND
OUTCOME BUDGET 2014-15

CHAPTER OF OUTCOME BUDGET 2014-15 **ANNEXURE-II**

	Name of the Scheme/Programme	Objective/Outcome	Outlay 2014-15 (Rs. In crores)			Quantifiable Deliverables/ Physical Output	Projected Outcome	Processes/ Timelines	Remarks/Risk factors
	2	3	4			5	6	7	8
			4 (i)	4(ii)	4(iii)				
S No.			Non Plan Budget	Plan Budget	Complementary Extra-Budgetary Resources				
1	VPT Opex	Operation and maintenance of VPTs		0.01					See Note 1
2	Replacement of MARR VPTs	Replacement of MARR VPTs with reliable technology and maintenance thereof		0.22					See Note 2
3	Provision of RCPs	Installation of Rural Community Phones in villages with population exceeding 2000, without having any PCOs and maintence thereof		0.07					See Note 3
4	VPTs in uncovered villages as per Census 1991	VPTs in uncovered villages as per Census 1991, excluding villages with population less than 100 or lying in Naxalite areas/forests etc.		0.01					See Note 4
5	Rural Household DELs installed between 01/04/02 and 31.03.05	Maintanance of RDELs insalled between 01.04.02 and 31/03/05		0.05					See Note 5
6	RDELs installed between 01.04.05 and 31.03.07 and (extended up to 31.03.10)	Maintanance of RDELs insalled between 01.04.07 and 31.03.2010		2.80					See Note 6
7	Mobile phase-I	Setting up and managing 7353 infrastructure sites and provision of mobile services in rural and remote areas		10.45					Scheme has been closed on 30.11.2013 (see note 7)
8	VPTs in newly identified uncovered inhabited villages as per Census 2001	Installation of VPTs in newly identified villages as per Census 2001		23.28					Rollout of the scheme was not completed within the financial year,extention is being sought for F/Y 2014-15. (see note 8)
9	Solar Mobile charging Facilities	Financial Support for mobile charging stations in 5000 villages through TERI project of Lighting a Billion Lives (LaBL)		0.23					Aggreement expired on April 2012 (See Note 9)

10	Wireline broadband connectivity in rural and remote areas	Total 888832 BB connections and 28672 kiosks		90.30		299049 BB Connection & 14378 kiosls	299049 BB Connection & 14378 kiosls	Jan-15	Dependent on the demand of the broadband connectivity in the rural & remote areas (See note -10)
11	Augmentation, creation & management of OFC Assam service area	OFC network augmentation between SDHQ & DHQ in Aasam		16.44		Complete Assam, 52 OFC Nodes	Complete Assam, 52 OFC Nodes	Dec-14	OFC laying depends on RoW permission from state government (see note -11)
12	National Optical Fiber Network for broadband connectivity to Panchayats (NOFN)	For providing broadband conecitity to 250000 village Gram Panchayats in the country through extending existing optical fiber network		1477.26		To connect 1,00,000 VPs on Fibre with resopective blocks in phase-I	To connect 1,00,000 VPs on Fibre with resopective blocks in phase-I	Mar 15- 200000 GPs	Railtel, BSNL and PGCIL are the 3 CPSUs esecuting the work. The proposed targets are linked with target to be achieved by the respectives CPSUs (see note 12)
13	Sanchar Shakti	For provision of mobile Value Added Services to rural women's SHGs for a period of one year		1.50					See Note 13
15	Scheme Mobile Communications Services in LWE affected Areas	Provision of mobile services in about 2199 locations of LWE affected areas as identified by Ministry of Home Affairs		586.78					Scheme has been approved by the Cabinet on 04.06.2013. BSNL has been nominated to excute the project.
16	Scheme for Mobile Services in Uncovered Villages	Provision of mobile services in about 56000 uncovered inhabited villages of the country							Scheme is under consideration of the Government
17	Support for Rural Wireline Household DELs installed prior to 01.04.2002	Ensuring operational sustainabiltity of rualwileline household DELs installed prior to 01.04.2002 in lie of ADC having been phased out		1250.00					A subsidy support of Rs. 1250 Crore to BSNL for the year 2012-13 for sustanability of wire-line connections provided prior to April 2002 is under consideration of the Government.
18	Augmentation, creation & management of OFC network in West Bengal & Sikkim	OFC n/w between SDHQ & DHQ in WB & Sikkim		0.00		NIL	NIL		Scheme yet to be launched

19	Wireless Rural broadband connectivity to rural and remote areas	5.5 lakh villages		0.00		NIL	NIL		Scheme on hold due to conflict with rural roll out obligation of 3G/BWA bidders.
20	Satellite Rural Broadband Connectivity in rural and remote areas	600 Satellite BB connections		0.00		NIL	NIL		Scheme yet to be launched
				3537.00					
		Round Off to		**3537.00**					

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:

VPT OPEX: Financial outlay has been proposed for settlement of spill over.

2. Financial outlay has been proposed for settlement of spill - over. Scheme has been closed on 30.06.2012. Remaining villages are to covered with VPT facility under Scheme for VPTs in the identified uncovered villages as per Census 2001.
3. Financial outlay has been proposed for settlement of spill - over / adjustments.
4. Scheme has been closed on 09.11.2012. Remaining villages are to covered with VPT facility under Scheme for VPTs in the I dentified uncovered villages as per C ensus 2001.
5. RDELs installed between 1.4.02 and 31.3.2005 Financial outlay has been proposed for settlement of spill over .
6. RDELs installed from 1/04/05 to 31/03/07 and (extended upto 31-03-2010) Financial outlay has been proposed for settlement of spill over .
7. Mobile Ph-I: Financial outlay has been proposed for settlement of spill over.
8. VPT-II: Financial outlay has been proposed for settlement of spill over. Rollout of the scheme was not completed within the financial year,extention is being sought for F/Y 2014-15.
9. SMCF: Financial outlay has been proposed for settlement of spill over.
10. Wireline Broadband Connectivity in rural and remote areas: 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.
11. OFC Assam: Augumentation, creation & management of OFC Network with higher band width to SDHQ/Blocks in Assam.
12 National Optical Fiber Network (NOFN). Plan to connect all the 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 and will be completed in a time period of two years.
13. 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.

Annexure - B

TELECOMMUNICATION ENGINEERING CENTRE
Outcome Budget 2014

(₹ in Crore)

S. No.	Name of the Scheme/ Programme	Objective/ Outcome	Outlay 2014-15			Quantifiable / Deliverables / Physical Output	Project Outcome	Process/ Timelines	Remarks /
1	2	3	4			5	6	7	8
			4 (i)	4 (ii)	4 (iii)				
			Non-Plan Budget	**Plan Budget**	**Complementary Extra-Budgetry Resources**				
A.	**Core Activities (Figures in units)**								
1	New Generic Requirements, Interface requirements and Service Requirements.	Preparation of new GRs / IRs				18			
2	Review of GRs/ IRs	Revision of existing GRs / IRs				21			
3	Preparation of Test Schedule/ Test Procedure	Preparation of Test Schedule				39			
4	Type approval	Certification to authorise use of equipment in telecom network				No target defined			
5	Interface approvals of customer equipment	Certification to authorise use of equipment in telecom network				No target defined			

S. No.	Name of the Scheme/ Programme	Objective/ Outcome	Outlay 2014-15			Quantifiable / Deliverables / Physical Output	Project Outcome	Process/ Timelines	Remarks /
1	**2**	**3**	**4**			**5**	**6**	**7**	**8**
			4 (i)	4 (ii)	4 (iii)				
			Non-Plan Budget	**Plan Budget**	**Complementary Extra-Budgetry Resources**				
6	Certificate of Approval	Certification to authorise use of equipment in telecom network				No target defined			
7	Revenue Collection	Fee collection from testing				No target defined			
B.	**Project Activities**								
	NE- Region MH-45520020302 020152- Machinery & Equipments	Satellite based Broadband network ---------- EMF Measuring Instrument		2.0000					
1	52750080001- Telecom -Engg Centre 0103- Procurement of EMF measuring Instruments 010352- Machinery & Equipments	EMF testing		7.0000					

	0102-SAR Lab- Mumbai+ Delhi 010152-	To carry out testing and certification of mobile equpiment about specific Absorption Rate (SAR)		1.0000					
	Machanery & equipment								
3	0105-Security Lab 010552- Machinery & Equipment			3.0000					
4	0106-CPE Lab 010652- Machinery & Equipment	To carry out testing of CPEs like telephone handset including multiline, cordless, CLIP, KTS, executive, modems, telephone attachment, POS terminals, SIP terminals, bluetooth, Wifi		0.5000					
5	0107-Green Passport Lab 010752- Machinery & Equipment	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		0.4000					
6	0108-Regional Test Lab-Delhi 010852- 0Machinery & Equipment	To carry out testing and certification of testing instrument		0.3000					

7	0108-Regional Test Lab-Kolkata 010852-			0.2000					
	Machinery & Equipment								
8	0108-Regional Test Lab-Mumbai 010852-Machinery & Equipment			0.3000					
9	0108-Regional Test Lab-Bangaluru 010852-Machinery & Equipment			0.3000					
11	Expenstion of LAN	Upgradation of existing LAN Infrastructure (including installation, testing, commissioning, etc.)	0.3000						
	Total		**0.3000**	**15.0000**					

Annexure - C

WIRELESS PLANNING CO-ORDINATION
Outcome Budget 2014-15

(₹s in Crore)

S. No.	Name of Scheme	Objective/ Outcome	Outlay 2014-15			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 BE 2014-15	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	Rs 2.40 Crore	Nil	Maintenance of facilities procured under NRSMMS project to make the system operational. Making of spill over payment, if any due after Arbitrator decision. Upgradation of software/hardware for ASMS/NSMS	--	--	--

Annexure - D

WIRELESS MONITORING ORGANISATION
Outcome Budget 2014-15

(`Rs in Crore)

No.	Name of Schemes/ Programmes in 12th FYP	Objective/ Outcome 12th FYP	Outlay 2014-15 (Rs. In Crores)			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcome	Process/ Timelines	Remarks / Risk Factors
			Non-Plan Budget	Plan Budget	Complementary Extra-Budgetary Resources				
1.	2	3	4			5	6	7	8
	Technical Schemes		4(i)	4(ii)	4(iii)				
	Technical Schemes					**Procurement of:**			
1.	Mobile Monitoring, including Direction Finding, facility	Procurement of: • Vehicle-mounted monitoring terminals ▪ Transportable monitoring (including remote monitoring) terminals ▪ Man-pack monitoring terminals ▪ Vehicle-mounted direction finding terminals ▪ Transportable direction finding terminals ▪ Man-pack direction finding terminals ▪ Airborne mobile monitoring terminals ▪ 100 vehicles (mostly small sized, but some big trucks)	N/A	25.0 *	Nil	(a) Procurement of six vehicle-mounted mobile and portable monitoring terminals for the six newly established monitoring stations in the XIth FYP, at an estimated cost of Rs. 58.5 crore. (b) Procurement of four microwave terminals planned earlier in the FY 2013-14, at an estimated cost of Rs. 20.0 crore. (c) Salary component of Rs 1.55 crore for the staff and other misc. office expenses of six newly created WMS's and Project Implementation Unit (PIU) proposed to be created in 12th FYP.	1. To equip new WMSs with monitoring facilities. 2. To augment / enhance monitoring capabilities at existing WMSs.	To be completed within 12th FYP	To be implemented with the approval of competent authority and concurrence of IFA * Expenditure in the current FY will be limited to the extant of funds available

From pre-page:

No.	Name of Schemes/ Programmes in 12th FYP	Objective/ Outcome 12th FYP	Outlay 2014-15 **(Rs. In Crores)**			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcome	Process/ Timelines	Remarks / Risk Factors
			Non-Plan Budget	Plan Budget	Complementary Extra-Budgetary Resources				
1.	2	3	4			5	6	7	8
	Technical Schemes		4(i)	4(ii)	4(iii)				
2.	Fixed Monitoring, including Direction Finding, facility	Procurement of : ▪ Terrestrial fixed monitoring systems ▪ Terrestrial fixed direction finding systems ▪ Satellite monitoring systems	N/A	6.35	Nil	(a) Procurement of 6 Nos. of fixed HF Fixed Monitoring facility for six new WMSs at an estimated cost of Rs 3.5 crore. (b) Phased replacement of HF and VHF monitoring equipment (other than supplied under the World Bank Project) at monitoring stations against the condemned equipment at an estimated cost of Rs. 4.0 crore. (c) Up-gradation of satellite monitoring and measurement facility at ISMES, Jalna at an estimated cost of Rs. 10.0 crore for enhanced monitoring capability in L, Ku and Ka bands.	To address monitoring of transmissions in HF and lower bands as well as satellite emissions	To be completed within 12th FYP	* Expenditure in the current FY will be limited to the extant of funds available

From pre-page:

No.	Name of Schemes/ Programmes in 12th FYP	Objective/ Outcome 12th FYP	Outlay 2014-15 **(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	Type approval, testing, calibration and maintenance facility	To procure hardware & software for Type approval testing	N/A	Nil	Nil	Procurement of hardware & software	To facilitate Type approval, testing , calibration and maintenance of monitoring equipments	To be completed within 12th FYP.	
4	Specialised hardware/ software and auxiliary components	To procure specialised hardware/ software and auxiliary components to enhance monitoring capabilities	N/A	8.50	Nil	(a) Procurement of Real-Time Signal Analysers/ portable signal analysers and Radio Network Analysers. (b) Replacement of existing five nos. specialized noise measurement equipments	To enhance monitoring capabilities of special transmissions	To be completed within 12th FYP	Portable signal analyzer has also be included in this scheme * Expenditure in the current FY will be limited to the extant of funds available
5	Training and Development facility	To procure technical hardware and software	N/A	Nil	Nil	Procurement of technical hardware and software	To develop training facilities.	To be completed within 12th FYP	
6	Manpower requirement	▪ Manning of Training and Development Centre ▪ Manning of six new WMSs created in	N/A	*	Nil	Creation of Project Implementation Unit.	To facilitate speedy implementation of Plan schemes under 12th FYP. Creation of posts	To be completed within 12th FYP	*Salary component to be met from Budgetary allocation under

		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					under various 12th FYP schemes.		S.No.1 above

From pre-page:

Sl. No.	Name of Schemes/ Programmes 12th FYP	Objective/ Outcome 12th FYP	Outlay 2014-15 **(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)				
7.	Misc. Expenses i.e. Salary, Office & Travel etc.	Expenditure under the different heads including salary in respect of 6 new WMSs .	N/A	1.55	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.		
	Total (A) Technical Schemes		N/A	**41.40**	Nil	N/A	N/A		.
8	**<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	**7.6**	Nil	Procurement of land & civil construction works at Dibrugarh, Lucknow, Patna, Vijayawada, Ranchi, Bangalore, Jammu, Jalandhar, Silliguri, Jalna, 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 of the competent authority.
	G. Total (A) + (B)		N/A	**49.0**	Nil				

Annexure - E

CENTRE FOR DEVELOPMENT OF TELEMATICS
Outcome Budget 2014-15

Annual Plan (2014-15)										
Rs in crores		**Name of the Ministry/Department : Center for Development of Telematics (C-DOT)**								
		Statement of Outlays and Outcomes / Target for FY 2014-15								
Sl. No.	**Name of scheme / programme**	**Objective/ Outcome**	**Outlay 2014-15 (Proposed)**			**Quantifiable Deliverables/ Physical output of the project**	**Projected Outcome for the FY 2014-15**	**Process/ Timelines for the FY 2014-15**		**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)	Research & Development for security management for Law Enforcement Agencies.		35.71		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 • Main CMC infrastructure installation • ILDs and ISFs installation; • Installation & Integration of RMCs with their corresponding TSPs. • Transitory Disaster Recovery (DR) infrastructure and related IT equipment.	Q1	• CMC infrstrucutre installation & upgradation up to 60% capacity. • Pilot CMC - DR at Delhi. • Installation & integration of RMCs in 1 LSAs, & 3 ILDs.	• CMS set-up with Data Centre Build, Transitory DR site with requisite capacity to monitor & intercept voice from TSPs in 21 LSAs and 10 ILDs.
								Q2	• Installation & integration of RMCs in 9 LSAs. • CMC DR infrastrucutre upto 30% capacity	
								Q3 & Q3	• Installation & integration of RMCs in 11 LSAs. • Data centre build for DR site upto 40% capacity • DR infrastructure up to 30% capacity	

2	Broadband Technologies	Design, Development of a high capacity (terabit) router technology.		32.32		• Development of Commercial grade multi terabit Router.	• Multi-terabit router prototype system • Commercial deployment of 1 terabit capacity router	Q1	• Multi-terabit router SW adaptation for IMS.	
								Q2	• Multi-terabit router SW adaptation for LTE	
								Q3	•Multi-terabit router HW implementation • Software porting on multi-terabit hardware	
								Q4	•Multi-terabit router integration & testing •Multi-terabit router prototype system	
3	Next generation mobile technology	To focus on Research & Development efforts on emerging Wireless Technologies for broadband Networks - 4G Technology.		57.18		4G Wireless Development				
(i)	LTE-A	Design & development of Femto eNodeB base station and the corresponding Evolved Packet Core (EPC).		35.77		• Femtto eNodeB system development • LTE macro base station development • Evolved Packet Core (EPC) development.	• Pilot trial of TDD LTE eNodeB system. • Technology commercializatio n for LTE FDD eNodeB system	Q1	Prototype RRH (Remote Radio Head) integration in TDD and FDD band with eNodeB system.	
								Q2	Development of FDD, femto 1watt radio.	

								Q3	• Development of RRM (Radio Resource Management), SON (Self Organization Networks) & OAM (Operation & Administration Module) • Development of TDD RRH (band 40) & FDD RRH (band 13)	
								4Q	• TDD LTE eNodeB system pilot trial. • Technology commercialization of FDD femto eNodeB. • eNodeB integration with WiFi technology.	
(ii)	Fixed & Mobile Converged Platform	To create a core network platform for delivery of services to fixed and mobile subscribers		21.41		Developoment of • Copper Access Node • On-line charging server • Payment gateway • Integrated LTE plus IMS core network • Converged core on Cloud Platform	Pilot trial of • Copper Access Node • Integrated legacy mobile technologies and IMS core • Payment gateway for IMS core. • Converged core on Cloud Platform	Q1	• Integrated release of Fixed Line Prepaid (FLPP). • Copper Access Node pilot / field trial.	Core platform readiness for rolling-out converged core network.
								Q2	Integrated release of Payment Gateway with IMS core.	
								Q3	Porting of Converged Core on Cloud Platform	
								Q4	Integrating with legacy mobile technologies	

4	Carrier networks' transport technology	To focus on Research & Development of optical access and aggregation system (OAAS) & optical Core networks (OCN)		26.91		Next Generation PON (NG-PON) & DWDM-based core network				Prototype NG-PON technology readiness for pilot trial
(i)	Optical Access & Aggregation system (OAAS)	Development of next generation PON technology		15.85		• 32G PON system : WDAN (WDM- based technology) • 10G GPON system : X-GPON (TDM-based technology)	• 32G PON WDAN system • 10G GPON OLT prototype	Q1	Validation completion: • OTDR controller card	
								Q2	Pilot trial commencement of OTDR controller card	
									• Design completion for WDAN ONT	
								Q3	• Design completion for WDAN OLT	
									Validation completion: • WDAN ONT	
								Q4	• Design completion for XGPON OLT (prototype)	
									Validation completion: • WDAN OLT	
(ii)	Optical Core Network (OCN)	Development of 40G / 100G DWDM Optical Network System		11.06		• Terminal Equipment (TE) • ILAs (In Line Amplifiers) • ROADMs (Reconfigurable Optical Aaa-Drop Multiplexer)	Prototype TEs for partially equipped 100G system	Q1	• Development completion for TE with 100G muxponder	Technology being in the nascent stage of development involve high end devices,

								Q2-Q3	• System integration & testing for partially equipped TEs with 100G muxponder	their availability may impact the developme nt schedule.
								Q4	• Validation commencement for partially equipped TEs for 100G muxponder • H/w & S/w development completion for TE 40G muxponder	
5	Secure wireless & wire-line networks	Tto focus on research and development for setting up a secure mobile communication networking using standard wireless technologies such as 3G, WiFi.		3.26		• Design and development of secure phone & tablet.	• WiPS tablet and handset • Testing of WiPS services with SDCN and launch of services.	Q1	• Trials for integrating core SDCN network with prototype handset.	
								Q2-Q3	• Design completion for secure tablet & handset.	
								Q4	• Integration testing of WiPS services with SDCN & launch of services for end users network.	
6	Telecom services & appplication	Software intensive applications for Converged NMS service delivery platform to support multiple applications and value added services		15.99		• Unified / converged network management system• Cusotmized platform for rural services (CPRS)				

(i)	Converged Network Management system (CNMS)	To build a Unified NMS (UNMS) to provide end-to-end unified view and monitor & manage service providers' networks and services.		12.98		UNMS release supporting functionalities such as provisioning management, configuration management, performance management, fault management, etc.	UNMS S/W release piloting in various client networks.	Q1 - Q2	• UNMS release v1.0.0 for NFS PoC • UNMS release v2.0.0 supporting various management functions, wirless functionality, abstraction layer based on S/W defined networks, Open flow, TMF standards etc. .		
								Q3 - Q4	• Readiness of UNMS release 2.1.0 supporing enhancements, PoC / piloting the release in networks of TSPs, ISPs, defence, etc.		
(ii)	Cusotmized platform for rural services (CPRS)	To develop a rural-specific customized service delivery platform for DRAX applications with advanced features		3.01		• Client system • Service Applications supporting various features like Gesture & Speech recognition, Near Field	• Application oriented services' implementation • Field deployment of CPRS system in	Q1 - Q2	• Implementation of Aadhar authentication and integration. • Implementation of Video conferencing		

		and simplied GUI.				Communication (NFC)	the client network • ToT of client hardware			
								Q3-Q4	• Implementation of gesture recognition. • Testing and internal validation • Field Trial (progressively with upgraded functionalities). • ToT commencement	
7	Satellite based technology	This scheme envisages the development of product(s) / technology based on the emerging requirements from prospective user organization(s)		9.32		Development of Satellite-based Hub baseband system	• Satellite Hub baseband Modem Subsystem • Terrestrial Interface Gateway Subsystem	Q1	Development of Gateway for terrestrial connectivity	New project proposed for developme nt in 2014-15.
								Q2	Design of a programmable hub baseband system	
								Q3	Integration of prototype hub	
								Q4	Field trials of prototype hub	

8	Next Generation security for telecom & data networks	To enhance the present interception techniques, development of indigenous encryption/decryption to enhance the network security to combat the emerging security threats, development of passive probes, Smart Phone intercept, social network monitoring.		8.74		Advance Intelligent Monitoring System (AIMS): • CMS architecture scaling up for capacity enhancement • Interception solution for new technology, eg. LTE, IP-TV, IMS converged & fixed mobile, etc. • Integration with Satellite & Marine interception, UID data base. • Advance Intelligence Manager based on Artificial Intelligence (AI)	• Upgradation of indegenous probe to support higher traffic • Interception solution for technologies: IMS-based fixed-mobile converged system, & LTE, NGN • Terminal support for other form factor devices for monitoring.	Q1-Q2	• Support for existing technology with unicode support for multi lingual SMS, bug fixes, ILD, LBS, multiple LIS provision, etc. • Advance Intelligent Manager supporting entity based tower intelligence software for bulk data collection, target SMS content analysis, prototyping communitypattern in call data, etc.	AIMS development to support interception for new technologies.
								Q3	• Design and development of interception solution for new technologies (LTE, LGN LIS, IPLC) • Monitoring applications for other form factor devices. • Stand-alone intelligence manager, grey market analysis, etc.	
								Q4	• Validation and pilot trial in the field (LTE, NGN LIS) Pilot trial in the field for • Interception solution for new technologies – LTE/ LTE-A, NGN • Content and crypt analysis	

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.		1.59		Projects related tofeasibility study / Proof ofconcept and setting uppilots in new / green fieldareas in telecom enablingtechnologies andnetworks.	• Proof ofconcept (PoC)• Feasibility study report	Q1 to Q4	The study programs are defined on year-to-year basis, and this includes active antenna design for 4G base-stations, mm waves for 5G base-stations, green power supply system and M2M communication.	
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.		66.98		Enhancement / Upgradations / support for : SDCN, MAX-NG / NGN, ATM Support, NMS Support, Software intensive applications, etc.	Activities are planned for every year, depending on customer request, field deployment requirements, market demands, etc.	Q1 to Q4	Enhancements / New Features / upgradation / adaptation / technical support for developed technologies	
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			**260.00**						

Annexure -F

TELECOM REGULATORY AUTHORITY OF INDIA

Outcome Budget 2014-15

Sl. No.	Name of the Scheme / Programme	Objective / Outcome	Outlay 2014-15			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
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.	--	18.00 Crores	--	(a) Consultative Studies / Workshop on Regulatory issues.	The proposed studies will help TRAI in formulating its Recommendations and in other Regulatory functions.	To be completed during 2014-15.	
						(b) Provision of training of TRAI official on technical and Regulatory issues.	To meet the training needs of TRAI officials.		
2.	Purchase of Land and Building (Capital) for TRAI Office.	To obtain own office premises.		22.00 crores	--				**Under Annual Plan for the year 2014-15 (BE) TRAI has proposed an amount of Rs.500.00 crores for this scheme.** Funds available under 'TRAI General Fund' (a non-lapsable fund) are proposed to be utilized as and when the proposal materializes.
	Total			40.00 crores					

Annexure - G

TELECOM DISPUTES SETTLEMENT & APPELLATE TRIBUNAL [TDSAT]
Outcome Budget 2014-15

(`Rs in Crore)

								(Rs.in Crores)	
Sl.No.	**Name of Scheme/ Programme**	**Objective/Outcome**	**Outlay 2014-15**			**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.		1.00		-			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		0.45		-			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	**1.55**					

Annexure –H

BHARAT SANCHAR NIGAM LIMITED
Outcome Budget 2014-15

(₹ in crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2014-15*	Quantifiable Deliverables (Physical Targets)**	Actual Achievement (Physical)	Processes/ Timelines	Remarks / Risks / Constraints
1	Addition in GSM Capacity	To provide DELs on demand	1623.39	100 Lakh			
2	Replacement of legacy TDM Switches by next Generation Network (NGN)	To provide Wireline DELs on demand	1530.42	5 lakh			
3(a)	Broadband Wireline	To provide Broadband connections (Wireline + wireline)	332.36	30 lakh			
	Broadband Wireless		118.59				
4	Laying & Commissioning of Optical Fibre Cable (OFC)	To provide transmission network for new exchange & Mobile equipment and provide bandwidth for core network.	931.36	20000 RKMs			
5	Others *		596.07				
		Total	**5132.19**				

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

2. ** The physical targets are as per draft MOU 2013-14 submitted to DPE. The same will be finalised after discussion with Task Force constituted by DPE, scheduled in January, 2013.

Annexure - I

MAHANAGAR TELEPHONE NIGAM LIMITED
Outcome Budget 2014-15

(` Rs in Crore)

S.No	Name of the Scheme/programme	Objective/ Outcome	Outlay 2014-15			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, WLL, Cellular and broadband connections (in K) *	Increase in Net new customers	-	-	-	500K	-	With in year 2014-15	
2	New Switching Capacity addition including capacity for WLL GSM, NGN ,IMS (in K)	Increase in Net Switching Capacity	_	755.35	_	Addition of 1100K lines in GSM network	Expansion of 2G / 3G GSM network	With in year 2014-15	Delay in supplies by supplier , AT problem in site acqusition and finalization of tender/ orders. Delay in permissiion for digging/laying of ducts for cables.
3	Deployment of DSLAM / FTTH (in K)	Increase in broadband and FTTH ports				Addition of 150K 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	_	52.11	_	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			**808.46**					
* Net new connection targets will not includes the disconnected dormant GSM subscribers (subscribers inactive for more than one year).									

Annexure - J

ITI LIMITED
Outcome Budget 2014-15

(` Rs in Crore)

Outcome budget 2014-15									
	Name of the Scheme/Programme	Objective/Outcome	Outlay 2014-15			Quantifiable Deliverables / Physical Output	Projected outcome	Process/timelines	Remarks / Risk factors
1	**2**	**3**	**4**			**5**	**6**	**7**	**8**
A	**New Schemes**		**4(i)**	**4(ii)**	**4(iii)**				
			Non Plan Budget	Plan Budget	Complementary Extra-Budgetary resources				
1	Solar project	Procurement of manufacturing equipments & test equipments		1.00				2nd quarter	
2	Defence projects	Establishment of infrastructure to take up manufacture of products for Defence sector						2nd quarter	
3	Data center & IT projects	Establishment of Data center and imlementation of IT projects						3rd quarter	
4	G-PON	Procurement of manufacturing equipments & test equipments						1st quarter	
5	Carrier Ethernet	Procurement of manufacturing equipments & test equipments						2nd quarter	
6	Software Defined Radio (SDR)	Procurement of manufacturing equipments & test equipments						1st quarter	
7	ADSL CPE	Establishment of manufacturing infrastructure.						1st quarter	

8	LTE	Procurement of manufacturing equipments & test equipments						3rd quarter	
9	SMPS & SCADA	Procurement of manufacturing equipments & test equipments						1st / 2nd quarter	
10	LED lighting	Procurement of manufacturing equipments & test equipments						1st quarter	
A	**Total New Scheme**								
B	**Continuing Scheme**	Provision for repairs / replacement of existing machinery & equipments.						1st / 2nd quarter	
	Grand Total (A+B)			**1.00**					

Note: The capital commitment / expenditure as indicated above is subject to the receipt of budgetary support from the Government under Revival plan.

Annexure - K

DoT Schemes
Outcome Budget 2014-15
NATIONAL INSTITUTE OF COMMUNICATION FINANCE
ALT CENTRE, GHAZIABAD-201 002 [U.P.]

(₹s in Crore)

S. No.	Name of Schemes/ Programmes	Objective/ Outcome	OUTLAY 2014-15			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	Complementary Extra-Budgetary Resources				
1	HRM for IP&TAFS i) Mid Career Training	Five stage training programmes for IP&TAFS officers	--	8.0	--	For institution-Alized training(MCT) to individual officers for career progression prelimlminary work such as course development and design, preparation of course kit, academic inputs exposure to various National /International Institute/Organisation	MCT-I, II & III for IP&TAFS officers.	By last quarter of 2014-15.	
	HRM for IP&TAFS 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.	--	4.0	--	IP&TAFS Gr.A probationers would be trained. Gr.B and Gr.C officers induction training.		Full Year	

	TARGET PEFORMANCE	FORYEAR 2014--15 :							
S. No.	**Name of Schemes/ Programmes**	**Objective/ Outcome**	**OUTLAY 2014-15**			**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**	**Complementary Extra-Budgetary Resources**				
	HRM FOR IP&TAFS iii) Institutional & Capacity Development Schemes & Initiatives	**Ongoing process.**	**--**	**3.0**	**--**	**Development of web based knowledge management portal, international co-operation and training in the fieled of communications etc.**		**Full Year**	
2.	**PHYSICAL INFRASTRUCTURE FOR NICF**	**Building of NICF campus at Ghitorni , New Delhi**	**--**	**68.05**	**--**	**For building of NICF campus at Ghitorni, New Delhi with state-of-the-art training and residential facilities preliminary works e.g. Preparation of DPF, boundary wall camp office et c.**		**Full Year**	

[Contd.]

Annexure - K

DOT Schemes
Outcome Budget 2014-15

(`Rs in Crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2014-15			Quantifiable Deliverable / Physical Outputs	Projected Outcomes	Processes/ Timelines	Remarks/ Risk Factors
1	2	3	4			5	6	7	8
			4(i)	4(ii)	4(iii)				
			Non- Plan Budget	Plan Budget	Comple-mentary Extra-Budgetary Resources				
1	OFC based Network for Defence Services (DS) (Army & Navy component)	To set up alternate network for Defence Services for releasing spectrum		3065.00		Laying of Optical Fibre Cable for Defence Services for providing alternate network	Alternate network on release of spectrum by Defence Services	Ongoing work	

[Contd.]

Annexure - K

DOT Schemes
Outcome Budget 2014-15

(` in Crore)

S.No	Name of the Scheme / Programme	Objective / Outcome	Outlay 2014-15			Quantifiable Deliverables / Physical Output	Projected Outcome	Processes / timelines	Remarks / Risk Factors
			4						
			4(i)	4(ii)	4(iii)				
1	2	3	Non- Plan Budget	Plan Budget	Complementary Extra-Budgetary Resources	5	6	7	8
1	Technology Development & Investment Promotion (TDIP)	i.Technology Development like R & D and IPR Generation ii.Promoting manufacturing and export of telecom equipment and services iii.For promotional schemes like Telecom Centres of Excellence(TCOEs), National and International Participation in exhibitions iv. Promotion of telecom sector through conferences and exhibitions in India and abroad.		1.00		Providing technical assistance for promoting investment in the manufacturing sector, export of telecom equipments to the developing / underdeveloped countries, organizing Telecom events & other seminars and IPR Generation through Telecom Centres of Excellence (TCoE).	To project India as the hub for telecom equipment manufacturing and showcase the telecom growth in the country	On going activity	

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 New Telecom Policy 1999

A world-class telecommunication infrastructure is a key to rapid economic and social development of the sector. It is critical not only for the development of the communications and information technology industry but also has wide spread ramification in various other sectors of the economy. Keeping these objectives in mind, the Government laid down the New Telecom Policy, 1999 (NTP, 1999). The guiding principles of the NTP are as follows:

- To make available affordable and effective communications for all citizens.
- To strive to provide a balance between the provision of universal service to all uncovered areas, including the rural areas, and the provision of high-level services capable of meeting the needs of the country's economy;
- To encourage development of telecommunication facilities in remote, hilly and tribal areas of the country;
- To create a modern and efficient telecommunications infrastructure taking into account the convergence of IT, media, telecom and consumer electronics and thereby propel India into becoming an IT superpower;
- To convert PCOs[20], wherever justified, into Public Teleinfocentres having multimedia capability like ISDN services, remote databases access, Government and community information systems etc.
- To transform in a time bound manner, the telecommunications sector into a greater competitive environment in both urban and rural areas providing equal opportunities and a level playing field for all players;
- To strengthen research and development efforts in the country and provide an impetus to build world-class manufacturing capabilities;
- To achieve efficiency and transparency in spectrum management.

[20] Public Call Offices

- To protect the defence and security interests of the country.
- To enable Indian telecom companies to become truly global players.

The key policy provisions of NTP-99 are:

1. As mentioned earlier, a significant shift from the fixed license fee regime to a license fee regime based on revenue sharing mechanism.
2. Interconnectivity and sharing of infrastructure among various service providers within the same area of operations is permitted.
3. Separation of policy and licensing function of the DoT from service provision function.
4. National long distance services sector to be opened to competition from January 1, 2000.
5. Service providers would carry both voice and data-traffic.

3.3 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.

3.4 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. "

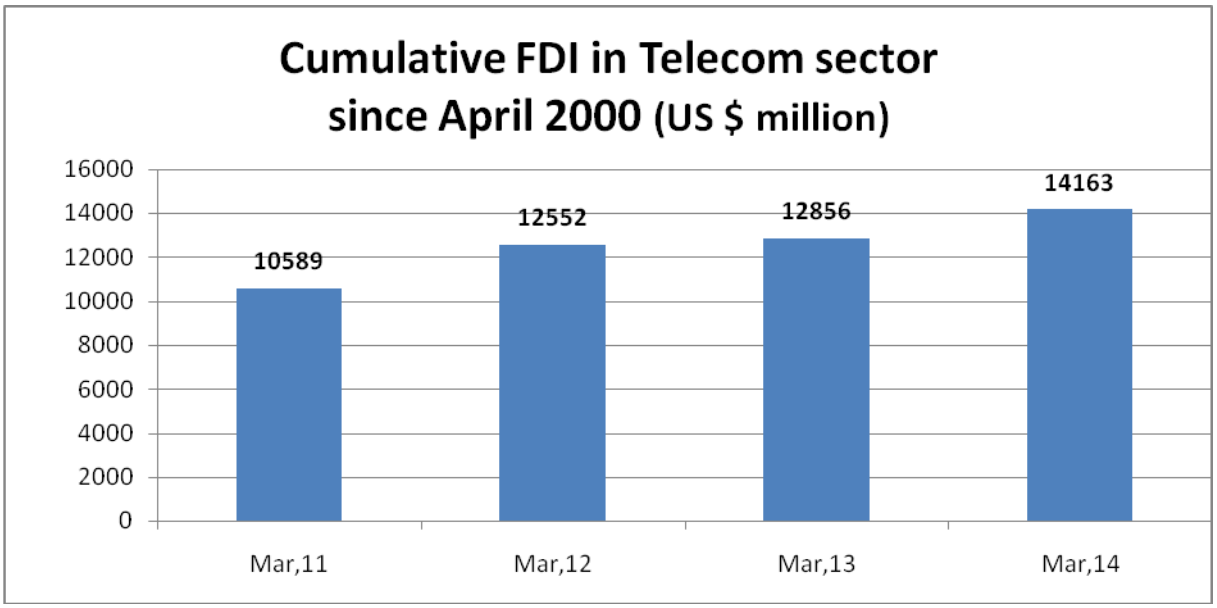
3.5 Foreign Direct Investment (FDI) in Telecom sector

Telecom Sector is considered to be one of the most attractive sectors for Foreign Direct Investment (FDI) in the country. To make telecom sector more investor friendly, the Government has raised Foreign Direct Investment (FDI) limit for all telecom services from 74% to 100%. The current FDI policy for the Telecom services, subject to observance of licensing and security conditions by licensee as well as investors as notified by the Department of Telecommunications (DoT) from time to time, is as under:

Sr. No.	Sector/Activity	FDI Cap/ Equity	Entry route
1.	Telecom Services (including Telecom Infrastructure Providers Category – I) All telecom services including Telecom Infrastructure Providers Category-I, viz. Basic, Cellular, Unified Access Services, Unified license(Access services),Unified License, National/ International Long Distance, Commercial V-Sat, Public Mobile Radio Trunked Services (PMRTS), Global Mobile Personal Communications Services (GMPCS), All types of ISP licences, Voice Mail/ Audiotex/UMS, Resale of IPLC, Mobile Number Portability services, Infrastructure Provider Category – I (providing dark fibre, right of way, duct space, tower) except Other Service Providers.	100 %	Automatic upto 49%. Beyond 49%, through FIPB route
2.	Other Service Providers (OSP) and Manufacture of Telecom Equipments	100%	Automatic

Actual Inflow of FDI in Telecom Sector from April 2000 to March 2014 is 14,163 US $ in millions. The Cumulative FDI data for last four years is as under:

Cumulative FDI in Telecom Sector Since 2000	
Up to Year Ending	Cumulative FDI (US $ in million)
March 11	10589
March 12	12552
March 13	12856
March 14	14163



Source: DIPP web-site

3.8 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.

3.8.1 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

3.8.2 Broadband

A key thrust area is to connect all villages with population more than 500 on National Optical Fiber Network (NOFN) to realize the vision of '**Broadband on Demand**'. Similarly, ensuring sufficient allocation of resources like spectrum, 'Right of Way' management and infrastructure sharing for broadband is essential. There is a need for national level effort to harmonise the policies of various state governments/ local bodies to address issues relating to allocation of land, power supply, grant of right of way and policy/ by-laws for erection of towers and so on. In addition, there is a need to provide incentives to encourage the uptake of broadband in sectors like education, healthcare, public safety, government operations, and so on.

3.8.3 National Optical Fibre Network:

The optical fiber presently has predominantly reached state capitals, Districts and blocks and there is plan 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 laying incremental fiber wherever necessary. Size of the incremental network is Approx. 5,00,000 km. Dark fiber network thus created will be lit by appropriate technology thus creating sufficient bandwidth at GPs level. This will be called National Optical Fibre Network (NOFN). Thus prevailing connectivity gap between GPs and Blocks/Districts will be filled. Non-discriminatory access to the network will be provided to all the telecom service providers. Further the broadband connectivity to 2.5 lakh GPs for various applications like e-health, e-education and e-governance etc. will be provided by NOFN as closed user group. The network is proposed to be completed in 2 years' time. The project is being funded by Universal Service Obligation Fund (USOF). The project is being executed by a Special Purpose Vehicle (SPV) Bharat Broadband Network Limited which is a company incorporated under Indian Companies Act 1956 and initially will be fully owned by Central Government, with equity participation from Government

and interested Central Public Sector Units (CPSUs) (BSNL, Railtel, Powergrid, GAILTEL, etc.). Tri-partite MoU for free RoW has been signed for all States & UTs except Tamilnadu and Lakshadweep. Consent is awaited from Tamilnadu and Lakshadweep. The work of NOFN has been distributed among 3 CPSUs viz BSNL, Railtel and PGCIL. BBNL& 3 CPSUs have already started the field survey & tender work.Work is likely to commence shortly.

3.8.4 Research & Development

Telecom Equipment and Services Export Promotion Council (TEPC) has already been set up for providing platform for export promotion of telecom equipment and services. The Export of Telecom equipments including mobile phones, parts and telecom cables during 2013-14 is Rs 19,813 crores.

The Government has set up Telecom Centres of Excellence (TCOE India) in Public Private Partnership (PPP) mode at country's premier technical and management education institutes. The leading telecom operators have joined in as principal sponsors. The TCOE initiative intends to harness the potential of our people and the industry to match global standards and competitiveness.
The major achievements of the TCOEs are as follows:

i) 8th TCOE at IIT Roorkee: The 8th TCOE has been established at IIT Roorkee with RAIL Tel India Corporation Ltd. As the Sponsoring Partner. The MoU signing ceremony was held on 5th June 2013 in the presence of Hon'ble MOCIT. The centre will be known as RailTel IITR Centre of Excellence in Telecommunications(RICET). With 100% budgetary support from RailTel, RICET will focus on "ICT and Broadband Applications".

ii) Technologies Ready for Commercialization: In addition to 28 technologies developed by TCOEs till Sep 2012, one more technology namely Network Opex Optimisation developed by TICET-IIT Bombay is ready to get commericialised to benefit Indian Telecom Industry. The Researchers of Network Opex Optimisation have incubated a research firm "Panchsheel Research Pvt. Ltd". The technology has demonstrated approximately 26% Opex saving during the field tests conducted at about 100 site locations.

iii) Digital Mandi for the Indian Kisan developed by BITCOE-IIT Kanpur has been launched on 18th June 2013 in Odisha by Hon'ble Chief Minister of Odisha after successful operations in Haryana. Recognised by Ministry of Agriculture as technology of national importance, it is aimed to disseminate the latest Mandi Prices to the Kisans through IVR, SMS and Video. Currently 30,000 farmers are using this facility.

iv) IPRs and Patents: In addition to 11 Patents and 14 IPR contributions from TCOEs till Sep, 2012. 9 patents have been filed, 1 by TICET-IIT Bombay, and 8 by VICET-IIT Kharagpur respectively.

Further, for development of standards for telecom especially suited to Indian environment and promoting R&D and manufacturing capabilities in India, Telecommunications Standards Development Society, India (TSDSI) –an industry led autonomous 'not for profit' Standards Development Organization for telecom products and services has been recognized by DoT.

3.9 DoT-USOF's Sanchar Shakti Scheme:

Recognizing the vital role that Information & Communication Technology (ICT) can play in the empowerment of the rural women, a scheme has been launched for pilot projects aimed at facilitating women's Self Help Groups (SHGs) access to ICT enabled services. The Sanchar Shakti scheme covers following categories of projects.

- Provision of a mobile VAS subscription to SHG with services
- Validity/warranty of at least one year.
- Setting up of SHG run mobile repair centers in rural areas.
- Setting up of SHG run modem repair centers in rural areas.
- Setting up of SHG run solar based mobile/CDMA FWT charging centres in rural areas.

Financial support from USO Fund is envisaged to be provided towards Mobile VAS subscriptions for SHGs in accordance with the provisions of underlying subsidy Agreements. Four Agreements have since been signed between USOF and Service Providers in the service area of Pune (Maharashtra) Uttrakhand, Ajmer (Rajasthan) and Andhra Pradesh areas of Srikakulam, East Godavari & Vishakhapatnam. The particulars are as under:

Sl. No.	**Operational Area**	**Effective date of Agreement**	**Village / SHGs**	**Beneficiaries (No. of women)**	**Subsidy payable (in Rs.)**
1	Pune (Maharashtra)	05.01.2013 Extended to 05.02.2013	65/211	2200	34,32,000.00
2.	Uttarakhand	05.01.2013 Extended to 05.02.2013	763/887	2200	34,32,000.00
3.	Ajmer (Rajasthan)	05.05.2013 Extended to 05.06.2013	53/444	3000	44,28,000.00
4	Srikakulam, East Godavari & Vishakhapatnam	10.3.2014	300/265 59/200 59/171	3200	49,92,000.00

Further MoU of POC for extension of Sanchar Shakti at Azamgarh UP (E) and Saharanpur UP (W) with M/s RMLISPL have been signed on 3.10.2013 for 3200 women beneficiaries.

In BE-2014-15, Rs. 1.5 Crore has been projected for the scheme.

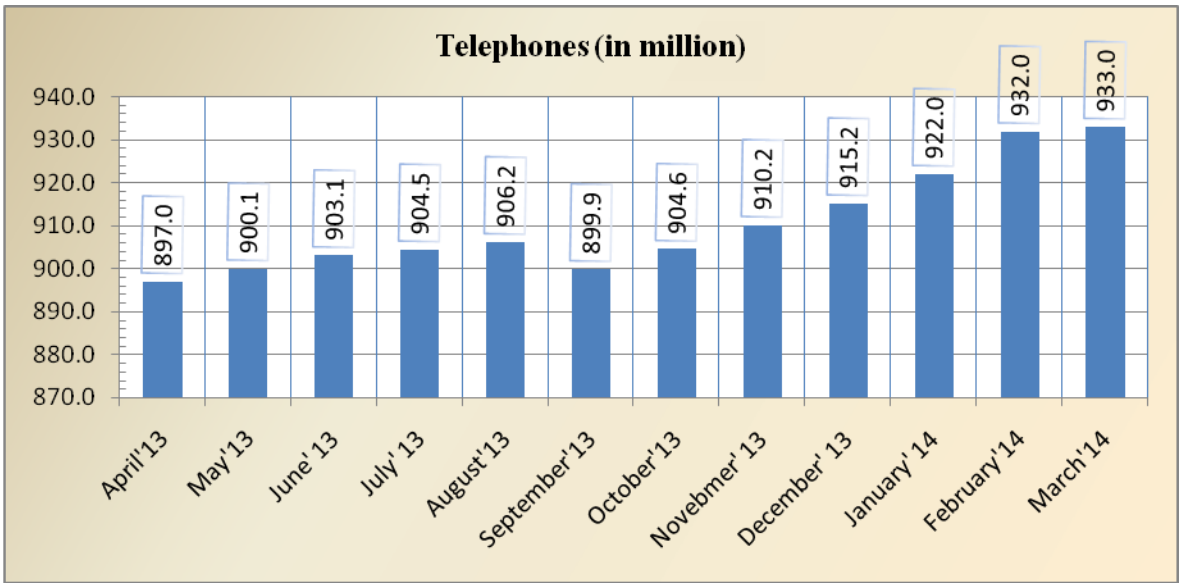
Chapter – IV

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 reached the peak level of 965.52 million in June 2012 and thereafter there had been continuous decline till February, 2013, when the number reached 892.02 million. Thereafter, once again telecom sector experienced an upward trend. The number of telephones, which were 898.02 million at the beginning of the current financial year have increased to 933.02 million by the end of March 2014. The decline in telecom user base after June 2012 was primarily due to the removal of inactive mobile telephone connections by the service providers. The graph above indicates the number of telephone connections at the end of each month during the year 2013-14.

The number of rural telephone has increased from 349.21 million to 377.78 million during the period April 2013 to March 2014. The urban telephones also increased from 548.80 million to 555.23 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 73.32 per cent at the beginning of the financial year 2013-14, increased to 73.60 per cent by the end of August 2013 and then declined marginally to 73.01 per cent in September, 2013 due to deletion of inactive phones by the service providers. However, there was increase again and the tele-density increased to 75.23 per cent by the end of March, 2014. There has been improvement in the rural tele-density during 2013-14 and it increased from 41.05 per cent at the beginning of the financial year to 44.01 per cent at the end of March, 2014. However, the urban tele-density decreased marginally from 146.64 per cent to 145.46 per cent during this period. The month-wise tele-density from April, 2013 to March, 2014 is shown below:

At the end of	Tele-density(in %age)		
	Rural	Urban	Overall
April'13	41.41	145.25	73.16
May'13	41.70	145.08	73.33
June'13	41.96	145.00	73.50
July'13	41.68	145.69	73.54
August '13	41.85	145.45	73.60
September '13	41.75	143.70	73.01
October '13	42.04	143.96	73.32
November' 13	42.48	144.14	73.69
December'13	42.71	144.63	74.03
January'14	43.18	145.06	74.50
February' 14	43.72	146.15	75.23
March' 14	44.01	145.46	75.23

Among the service areas, Tamil Nadu (114.14 per cent) has the highest tele-density followed by Punjab (107.23 per cent), Himachal Pradesh (105.59 per cent)Kerala (96.19 per cent) and Karnataka (92.45 per cent). On the other hand, the service areas such as Bihar (46.10 per cent), Assam (48.74 per cent), West Bengal (55.13 per cent), Madhya Pradesh (56.04 per cent) and Uttar Pradesh (57.27 per cent) have comparatively low tele-density. Among the three metros, Delhi tops with 226.85 per cent tele-density, followed by Mumbai (151.90 per cent) and Kolkata (142.67 per cent).

4.1.3 Composition of Telephones

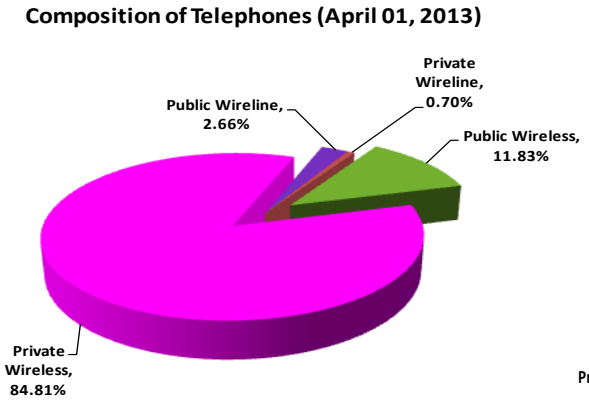
A. Public vs. Private

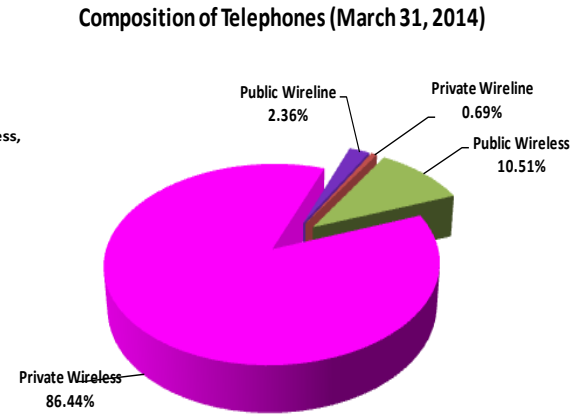
An analysis of operator-wise number of telephones reveals that PSUs (BSNL & MTNL) still have a large share of nearly 77.30 per cent in the wire line segment by the end of March 2014. Private operators, on the other hand, have 89.16 per cent share in the wireless segment. Overall, Bharti Group with 22.37 per cent of the total telephones, both landlines and mobiles taken together, has the largest share followed by Vodafone Group (17.86 per cent), Idea (14.55 per cent), two PSUs (12.87 per cent) and Reliance (12.02 per cent).

The share of private sector, in terms of number of subscribers, increased from 85.51% to 87.13% during the period from April, 2013 to March 2014. On the other hand, the share of public sector declined from 14.49 per cent to 12.87 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 96.64 per cent at the beginning of the financial year to 96.95 per cent by the end of March 2014. On the other hand, the share of wire line telephones declined marginally from 3.36 per cent to 3.05 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 2013 and 2014.

(Telephone figures are in million)

		At the end of March	
Sl. No.	Item	2013	2014
1	Total telephones	898.02	933.05
2	Landline telephones	30.21	28.50
3	Wireless telephones	867.81	904.52
4	Rural telephones	349.21	377.78
5	Urban telephones	548.80	555.23
6	Telephones of Private Sector	767.91	812.96
		85.51%	87.13%
7	Telephones of Public Sector	130.11	120.05
		14.49%	12.87%
8	Rural tele-density (%)	41.05	44.01
9	Urban tele-density (%)	146.64	145.46
10	Overall tele-density (%)	73.32	75.23

4.1.4 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.

4.1.5 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 31.12.2013, there are 376 Licensees for Internet Services which include 99 Category "A" Licensees, 153 Category "B" Licensees and 124 Category "C" Licensees. Till 31.01.2014, two Licenses have been issued for ISP authorization under Unified License. As on 30th September 2013, there were about 22.19 million internet subscribers including 15.35 million Broadband subscribers (this figure does not include the customers who access internet through wireless phone). Apart from the above, as on 30th September 2013, there were about 188.20 million internet subscribers who accessed internet through wireless phones.

(The subscriber figures are as per TRAI performance Indicator Report for the Quarter ending September 2013)

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 30.09.2013 there are 37 captive CUG VSAT networks and the number of VSATs under this service is around 5,600 as on 30.09.2013.

(ii) Commercial CUG VSAT license wherein the licensee company can provide CUG VSAT service to a number of CUGs on commercial basis. As on 30.09.2013 there are 13 licenses for commercial CUG VSAT services and the number of VSATs under this service is around 1,85,000 as on 30.09.2013.

Disaster Management

After natural calamity in Uttarakhand in June 2013, the top most priority was given to restoration of mobile connectivity in the affected areas of Uttarakhand and most of the services

were restored promptly. The status of telecom facilities and particularly that of BTSs in the affected areas was monitored on daily basis.

In addition, various other measures were taken to help affected peoples and their relatives. Instructions were issued to telecom operators to open helpline numbers and keep them functional. They were also instructed to provide on request last location of the missing persons to their relatives/friends.

4.1.7 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%.

The year 2013-2014 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, ITSOetc. 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.

i. **Strategic activities**
ii. **Activities on Bilateral Cooperation**
iii. **Activities on Multilateral Cooperation and Conferences of Intergovernmental and International Organizations**
iv. **International Exhibitions and Promotion events**
v. **Capacity building programs with ITU / APT and ITU-T study group meetings**

1. Strategic Activities

The IR division coordinated activities in line with the DoT International Relations strategy to complement the efforts of DoT units to accomplish the objectives of NTP 2012. Several high level engagements with some of the strategically important countries did take place during the year. Engagements and MoUs with Japan, Israel, Vietnam helped in this direction on strategic and regional fronts. India made a joint statement with Japan in the India-Japan Partnership mission held at New Delhi. India also signed two MoUs with Vietnam in ICT cooperation.

The visit of Dr.HamadounToure, Secretary General, ITU in May 2013 cemented high level engagement between India and ITU for collaboration on several fronts. India has been elected to Chair the Asia Pacific Telecommunity (APT), consisting of 38 member states, in preparatory process during 2013 and 2014 for the Plenipotentiary conference scheduled in October 2014. India played a significant role in APT preparatory process for World Telecommunication Development Conference (WTDC) and also in the conference held during March-April 2014. India has been appointed as Vice Chair for the Telecommunication Development Advisory Group (TDAG) from Asia Pacific Region to advise ITU-D on programs and its activities during 2014-2018.

The National Working Group on ITU-D study groups made contributions for the study group activities and for WTDC-14 and they have been accepted and incorporated in the study group questions and programs of ITU-D for the period 2014-2018.

2. Bilateral Cooperation

I. Indian Delegations visiting abroad

i. **Israel**: A high level delegation led by Hon'ble Minister of Communications & IT accompanied by DGCERT, DeitY and DDGSecurity visited Tel Aviv, Israel in April, 2012. Focus was on security of ICTs and Technologies.

ii. DDG Security, JS A visited **Israel** in June 2013with focus on telecommunications and security aspects.

iii. **USA**: The DDG Security participated in the Indo-Strategic Dialogue on Cyber Crime and Indo-US ICT working group meeting held at Washington during June.

iv. **Pakistan:** The DDGCS, DoT was part of the Indian delegation led by Commerce Secretary visited Pakistan for a bilateral meeting in September.There were deliberations on mobile roaming implementation between the countries.

v. **Canada**: The DDG IP participated in the India – Canada Comprehensive Economic Partnership Agreement (CEPA) meeting held at Ottawa, Canada during 15-17thNovember as part of an Indian composite delegation. Both sides discussed the draft text in respect of cooperation in the field of Telecommunications and IT to be incorporated in CEPA.

vi. **Bangladesh:** A delegation comprising representatives of DoT (JS-T), MEA, Govt. of Tripura and BSNL visited Bangladesh during July, 2013 to discuss the issue of Agartala-Kolkata telecom link through Bangladesh for BSNL. During that meeting it was decided that BSNL shall discuss the commercial terms with Bangladesh Telecom Communications Ltd. (BTCL) and Bangladesh Sub-marine OFC Cable Company for taking leased bandwidth from Agartala to Kolkata via Bangladesh and internet lease line to Agartala from Cox Bazar Bangladesh.

vii. **Japan:** A high level Indian delegation led byMember (Technology), Telecom Commission visited Japan during February, 2014. The Japanese delegation was led their Vice-Minister for Policy Coordination (International Affairs). A bilateral meeting was held to carry forward the objectives contained in joint statement between India and Japan during Public Partnership Program held in Delhi during October, 2013 and also the points taken up during the meeting of Senior Vice Minister for Internal Affairs and Communications, Japan withHon'bleMoC&IT on 16.01.2014.

During the bilateral meeting it was agreed that from the point of view of importance the following projects may be among the firsts in the priority for formation of Joint working Gropus.

1. Green Telecom **-JWG 1-1**
2. Japan-India combat spam project **JWG 1-2**
3. Detecting symptoms and quick response to cyber-attacks **JWG 1-2**

4. Traffic prediction and control with GPS probe data **JWG 2-1**

Both sides showed their interest for expeditious firming up these projects to initiate dialogue between TEC India and Japanese standards bodies such as ARIB, TTC etc. for joint working on various standards in international as well as for exchange of information and exploring more area of cooperation among these bodies.
Later the delegation attended the NTT R&D forum at NTT R&D CenterMusashino and also had meetings with the top management of NTT. The President of NTT Corporation shared various activities including R&D and security of telecom networks taken up by NTT Corporation. Member (Technology), Telecom commission also shared his experiences of Indian Telecom and also discussed the telecom network security related issues.

The delegation had a detailed discussion with the management of Fuzikura and Member (Technology), Telecom Commission invited Fuzikura to explore the possibility of establishing an OF unit in India keeping in view the NOFN project and large untapped potential of FTTH and cable demand for FTTH.

II. Foreign delegations visited India

Important foreign delegations that visited India are as below:

i. **Japan**: H.E. Mr. KimiakiMatsuzaki, Senior Vice Minister for Internal Affairs and Communications, Japan met Hon'bleMoC&IT on April 30 in Shastri-Bhawan, New Delhi. Both leaders discussed various issues for enhancing cooperation between two countries in the field of Telecommunications and IT in the years to come.

ii. **Finland:**Ambassador Ms.TerhiHakala met Hon'bleMoC&IT on July 24 in Sanchar-Bhawan, New Delhi. Ms Hakala paid courtesy visit after completion of her assignment in India.

iii. **Lao PDR**: Mr. HiemPhommachanh, Lao PDR Minister of Post-Telecommunications and Communication visited New Delhi to participate in India-ASEAN Meeting held under the aegis of Ministry of External Affairs. During his visit to India, he met with the Top Management of MTNL on December 21 and visited MTNL's Network Operation Centre(NoC) and Data Centre.

iv. **Panama**: Mr. Eduardo E. Jaen, General Administrator National Authority for Governmental Innovation, Government of Panama met Hon'bleMoS (C&IT) on 10th December 2013

v. **Ecuador**: Mr. Adolfo Mariscal, Advisor to the Vice-President of Ecuador met Addisional Secretary on 22.11.2013 and discussed how India can cooperate Ecuador in building their Telecom and IT infrastructure.

vi. **Australia:** Robert O'Farrell,Premier of Australian State of New South Wales met Hon'bleMoS (C&IT) on 3rd December 2013

vii. **Canadian** Chief Trade Commissioner Ms.Ms. Susan Bincoletto met Secretary (T) on January 30, 2014

viii. **USA**: Mr. Steve Van Andel, Chairman Board of US Chamber of Commerce met Hon'bleMoC&IT on 30th October 2013.

ix. **Catalonia:** Catalonian Minister of Labour called on Hon'ble Minister of Communications &IT ShKapilSibal on 25th Nov, 2013.

x. **Vietnam:** Dr. Nguyen Bac Son, Minister of Information and communications, of Socialist Republic of Vietnam, met Hon'bleMoC&IT on ICT Co-operation on July 4th in New Delhi. During the discussions, both sides unanimously agreed that Electronics manufacturing, Capacity building, Software services, Standards setting, Cyber Security, Spectrum management, ICTs Regulation, Co-operation on multilateral platforms such as ITU, APT etc., and Disaster management in coastal areas are some of the many areas, the two countries can cooperate with each other. On the occasion, two MoUs were also signed – one on cooperation in the field of telecom regulation signed between, TRAI & VNTA and on cooperation in spectrum management between, ARFM, Vietnam & WPC, DoT. As decided in the meeting, a Joint Working Group for cooperation in the field of Telecom, Post and IT between the two countries has also been formed

xi. **Japan:** The India-Japan ICT Public-Private Partnership Mission was held on 3 &4th October at the Hotel Taj in New Delhi. This was followed by a bilateral meeting between India and Japan. Mr. Masahiro Yoshizaki, Vice Minister for Policy Coordination, Japan led the Japanese side and the Indian side was led by Shri Anil Kaushal, Member (Technology), Telecom Commission, Ministry of Information and Communications. Both expressed that the relations between two countries had reached all time high and both countries can further excel cooperation in areas of mutual concern and industries from both the countries would take it further to practical level. It was also decided in the meeting formulate JWGs to take forward the cooperation between the two countries.

III. Important Joint Commission meetings

Inputs from Department of Telecommunications were given to various Joint Commission Meetingsheld under the aegis of Ministry of Commerce & Industry and Ministry of External Affairs. Some of the important of which includes

i. India-Japan 1st Economic Strategic Dialogue held on April 30 under the aegis of MEA.India- Bangladesh Joint Consultative Committee (JCC) meeting held on 7 May 2012 under the aegis of Minister of External Affairs.

ii. 7th Meeting of the India-EU Joint Working Group on SPS/TBT held on July 19 held under the aegis of Ministry of Commerce and Industry.

iii. Foreign Office Consultation Meeting for India-Myanmar (September)& India-Sweden (October) held under the MEA

iv. Joint Economic Commission Meetings between India –Bosnia, India-Herzegovina, India-Bulgaria, India-Czech, India-Switzerland, India-Cyprus, held under the aegis of Ministry of Commerce and Industry.

v. 2nd review meeting of 9th JCM bet ween India and Saudi Arabia held in Delhi on 6-7th November, 2013 under the aegis of Deptt. Of Economic Affairs (DEA).

vi. 3rd session of India-Poland Joint Cooperation for Economic Cooperation held on 8th October 2013 under the aegis of DIPP.

3. Multilateral Cooperation:

i. Visit of SG, ITU:

Secretary General, ITU, Dr.HamadounToure, was on his official mission to India during 5-8th May. He was accompanied by Dr. EunJu Kim, Regional Director, Asia Pacific Region, Bangkok. He had meetings with Hon'bleMoC& IT,Hon'bleMoS C&IT (D) &Hon'bleMoS – C&IT (K) and with the senior officers of DoT. He also met industry leaders, industry associations and participated in functions organized by industry, academia during the mission. He addressed the senior officers of DoT and addressed the students and academic community in the school of International Studies, JNU along with Shri KasturiRangan, Member Planning Commission.

ii. Preparatory meetings for WTDC and PP-14

The First preparatory meeting was conducted at Seoul, Apr 2014. The DDG (IR) has been elected as the Chairman of APT preparatory process for the region for PP-14 conference. The 2nd Prep meeting, steered by India under the Chairmanship of DDG (IR) for PP-14 was held at Australia during October 2014.

iii. WSIS-WTPFMay 2013:

A delegation led by Member (T) and comprising DDG (IR), DDG (FEB), Dir (IR-II) participated in this high level event. India hosted a joint seminar along with Onmobile India on Mobile VAS services and opportunities in India during the event. The event was well received and the Deputy Secretary General, ITU also attended the event.

Indian delegation made an effective participation along with PMI in the strategic dialogue event of the World Telecommunication Policy Forum (WTPF) during the program.

iv. The Adviser (T), Sr. DDG BWS participated in the Symposium on ICTs, the Environment and Climate change, Workshop on Human Exposure to Electromagnetic Field in May 2013. The Adviser T delivered a lecture on the subject to the international audience with a comprehensive contribution on Indian experience.

v. The Adviser (T), DDG (CS) participated in the International advisory committee meeting on Human exposure to electromagnetic fields at Paris June 2013. They held detailed discussions with WHO and other participating organizations on the important subject.

vi. ITU Council Session 2013: Member (F), Sr. DDG (WPF), WA, DDG (IR) in the ITU council session in June 2013. As a council member, India participated in the Council meeting and contributed in important activities.

vii. ICANN-47 meeting was held in Durban in July 2013 and the DDG (NT) participated in the meeting, which reviewed various activities and plans of ICANN.

viii. DDG (NT) participated in the eighth annual meeting of internet governance forum at Indonasia in October 2013.

ix. Connect Asia Pacific Summit & ITU Telecom World 2013 at Bangkok: A delegation led by Sr.DDG (TERM) participated in the Connect Asia Pacific Summit and ITU Telecom World 2013 held at Bangkok during 18-22nd November. Several partnership opportunities were discussed during the event to bridge the digital divide. The delegation consisted of DDG (LF-II), DDG (IR). India supported the Vision and Summit Leaders' statement regarding the need for mobilizing the resources and for developing strategic partnership with all stakeholders in the ICT eco system.

x. Director (Security) participated in the**4th APT cyber security forum at Malaysia** during December 2013.

xi. GSMA MWC :

The Mobile World Congress event held at Barcelona in February 2014 is an important event for India considering its strategic importance for India in Telecommunications. The event brings Policy makers, Service providers, Operators, technology and application providers at one place. Secretary T Barcelona Feb 2014, Sr. DDG WPF, DDG (IR), DDG (M), TEC.

During the congress, the Secretary (T) delivered an address on the regional policy and the future of the mobile eco system in Asia Pacific region and participated in the panel discussion. He had several meetings with top managements of Nokia, Ericsson, Vodafone who are key players in India in supplying mobile equipment and in services. He also participated in the COAI coordinated Indian industry reception during the congress.

The Secretary (T) and DDG (IR) visited ITU HQ at Geneva as part of the visit and had important meetings with SG, ITU and three directors of T, R, D bureaus and with PMI Geneva. The discussions were focussed on developing India ITU collaboration in different areas in Telecom. India considered hostingsome of the ITU events in India to enhance the participation from India.

xii. The World Telecommunication Development Conference (WTDC-14) and its preparatory process

ITU Regional Development forum and 2nd Prep meeting for WTDC at Cambodia April 2013: Adviser (O), DDG (USOF), Jt. CCA, Director (IR) participated in the conference. India made several contributions under regional initiatives, study group questions and for programs.

The 3rd,4thPrep meetings for WTDC-14 were held in Australia and Thailand in October 2013 and January 2014 respectively. India participated very actively in the preparatory process and as Vice-Chair for the working group on Strategic Plan, India made significant contribution for the ITU-D strategic plan. India's efforts resulted in developing the APT view document in consensus with all the participating member states. As a recognition of active participation, India has been nominated as the Vice Chair for important Committee 3 for WTDC-14 and also as the Vice Chair for the TDAG from Asia Pacific Region.

As part of preparations, two meetings of National Working Groups comprising Industry members, DoT officers were held in February 2014 and contributions were prepared from DoT.

A delegation led by Secretary (T) & Member (T) and Member (F), WA, Sr. DDG (TERM), two DDGs, two Directors participated in the WTDC-14. On 31st March, 2014 during the High Level segment, the Secretary (Telecom) delivered India's policy statement on the WTDC. The DoT delegation presented 5 contributions for the WTDC held at Dubai during 29th March-10 April 2014. Indian contributions have been well supported and accommodated in the final acts of the conference on issues such as Partnership development in ITU activities, ITU-D strategic plan, revisions to study group questions etc. The Director (IR-II) has been elected as the Vice Chair for TDAG from Asia Pacific Region. The DoT delegation also had bilateral meetings with USA, African Telecom Union, Intel, Japan etc.

xiii. ITSO IAC meeting: India is a member of ITSO Advisory Committee. The Director (DS-1) participated in the 18th meeting of Advisory Committee of International Telecommunications Satellite Organization (ITSO)at **Washington**in Feb 2014 that dealt important aspects such Iran-USA Intelsat issue etc.

DDG (TTSC), visited**France**to participate in the 3GPP SA WG3 74th meeting for National Security Standards.

4. Study Group meetings and workshops:

i. The ITU study group meetings are aimed to build capacity and contribute for harmonizing standards, share best practices and learnings 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.

ii. DDG NGN, TEC, DDG DS, DoT participated in the ITU-T study Group 17 meeting on Security aspects at Geneva April 2013.

iii. DDG (T&A), Director (FLA), TEC participated in the ITU-Tstudy group 15 meeting at Geneva July 2013

iv. ITU-D study group meetings were held in September. A delegation led by Member (T), Adviser (T), DDG (NGN), DDG (NT), Director (IR), Director (TERM), Director, TEC, ER participated in the meetings.

ITU-TRCL workshop was held at Srilanka in October 2013. The Adviser (T), Director (Electrical) participated in the event. The Adviser (T) delivered a lecture on the subject to the international audience.

5. Trainings:

i. Innovative Applications for Rural Broadband Community – Training: A delegation comprising JA (F), two Director USOF attended the training organized jointly by ITU and Universiti Utara. Apr 2013 at Malaysia

ii. Mobile Internet: Director AS V participated in the training course at China May 2013

iii. Infrastructure sharing models and practices: Director BB, Director (WF) participated in the training at Bangkok, May 2013

iv. Mobile security Training: Dy. Administrator, USOF, participated in the NBTC-ITU program at Bangkok June 2013

v. Advanced International Practices Program on 'Telecom Policy and Regulation for Next Generation Network' organized by Public Utility Research Centre, Warrington College of business administration, University of Florida, August 2013. at USA attended by Sr. DDG TEC, JA (T), JA(F), USOF

vi. Enabling Frame Works for ICT Development-The Singapore Experience : The Director (IR), Director (WR), Director (AS-1) participated in the ITU IDA Executive training programme in August 2013 at Singapore.

vii. NDAS training from Blackberry: Director Security, DoT and Director (TERM), Mumbai participated in the training program at Canada during November 2013.

viii. 3gpp meeting for security standards in testing of Telecom/IT elements used in Telecom: DDG (Security), Director (RTEC), Bangalore attended the meeting.

ix. Practical Technologies and their Implementation of small Scale Telecommunications for the Rural areas: ADG TERM, Ahmedabad participated in the training course in Dec 2013at Japan

x. Licensing and access price regulation of submarine cable landings: Director (CS-III) participated in the NBTC-ITU-PTA Asia Pacific Centres of Excellences training in. Dec 2013, at Thailand

xi. World Telecommunications/ICT Indicators Symposium (WTIS): Director (ERU) participated in the ITU December 2013 in Mexico.

xii. Action for Next Generation Mobile Communication System: Director (Estt) participated in the training course in December 2013 at Japan.

xiii. Strengthening Disaster Preparedness in Asia Pacific region Utilizing ICT for Public Safety: Director (Vig) participated in the training course in Feb 2014 at japan

xiv. Utilization of ICT Service & E-Applications for Overcoming Digital Divide: Director (IGT) (NTIPRITT) participated in the training course in March 2014 at Japan

xv. Cyber Security Policies and Technologies for the Broadband Communications: Director (NP), NTIPRIT participated in the course in March 2014 at Japan.

6. Events

i. **Leaders Forum** :Administrator, USOF participated and addressed at the Leaders Forum in Zanzibar in the first week of May 2013 on Indian experience and opportunities.

ii. **Asia Pacific 2nd Mobile Asia Expo and Public Policy forum**: Administrator (USOF), Pr. CCA, Delhi, Director (AS-IV), DS (Policy) participated in the in Asia Pacific 2nd Mobile Asia Expo and Public Policy forum in June 2013.

iii. **17th global standards collaboration meeting** :Additional Secretary and DDG (T&A) participated in the 17th global standards collaboration meeting at Jeju, South Korea May 2013.

iv. **Communicasia**: DDG (SU), Director (TPF), Director (IP) participated in the Communicasia event during June 2013 at Singapore.

v. **Futurecomm**: DDG IP participated in the Futurecom 2013 event at Rio De Janeiro, Brazil during October 2013.

vi. **GITEX-2013:** The Director IP participated in the GITEX 2013 fair held at Dubai during October 2013.

vii. **Africacom-2013:** The Additional Secretary (T) and Director IP participated in the Africacom 2013 held at South Africa during November 2013.

viii. **Vietnam ICT event**: The DDG IP participated in the Vietnam event during November 2013

ix. **Annual Digital Financial Service and Future of Digital Payment 2013 Conference**: Addl PS to MoC& IT, Director (AC-1)participating in the conference in August 2013.

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 2013 to March 2014 about 15 GRs/ IRs were prepared, 13 GRs/IRs revised.

(ii) TEC is responsible for preparation of Test Schedule during the period April to January 2013; about 52 Test Schedules were prepared. The review of the performance for the year 2012-13 and for the year 2013-14 is placed at **Annexure-L**.

4.4 Wireless Planning and Co-ordination

The Wireless Planning and Coordination Wing of the Department of Telecommunications deals with the spectrum management, wireless licensing, frequency assignments, international coordination for spectrum management and administration of

Indian Telegraph Act 1885, (ITA, 1885), for radiocommunication systems and Indian Wireless Telegraphy Act 1933, (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 Allocation Table of Radio Regulation of International Telecommunication 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 use 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 has launched BWA services in Kolkata and Bangalore service area.
- Internet Service Provider (ISP) service uses frequency bands 2.7-2.9 GHz and 3.3-3.4 GHz.
- Frequencies are also assigned for Captive usages to Govt., PSUs and Private entities in different frequency bands.
- Spectrum in the 2G bands of 800 MHz and 1800 MHz were put to auction. In the auction conducted, no bidding interest was expressed for spectrum in the 800 MHz band. The auction for spectrum in the 1800 MHz which commenced on 12.11.2012, concluded on 14.11.2012 with each participant that bid for spectrum securing the same. No bids were received in four service areas namely Delhi, Mumbai, Karnataka and Rajasthan in the 1800 MHz band. The total value of blocks allocated in the auction of 1800 MHz band was ` 9407.64 crore.
- Orders for levying one time spectrum charge on spectrum holding by existing GSM operators beyond 6.2 MHz with effect from 01.07.2008 and beyond 4.4 MHz from 01.01.2013 have been issued.
- Auction of spectrum in 1800 MHz band in 4 service areas i.e Delhi, Mumbai, Karnataka and Rajasthan where no bids were received in the last auction held in November, 2012, auction of spectrum in 900 MHz band in three Metro service area i.e. Delhi, Mumbai and Kolkata and auction of spectrum in 800 MHz band in 21 service areas are scheduled to be held in March, 2013.

- SACFA clearances are granted for fixed wireless stations ensuring aviation safety, interference free operations and line of sight obstruction.
- Delicensing of frequency band 433-434 MHz: Based on the requests received from various applicants, a Gazette Notification G.S.R.680 (E) dated 12th September, 2012 for delicensing frequency band 433-434 MHz has been issued for the usage of low power devices or equipments for indoor applications in the 433 to 434 MHz frequency range, on non-interference, non-protection and shared (non exclusive) basis.

4.4.2 International Coordination

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.

Satellite coordination with other Administrations

- Operator level coordination meeting took place with **China, Malaysia and Japan** to resolve technical issues.

- Coordiantion of INSAT-MET series of satellite network was taken with **France, USA, Saudi Arbia, Australia, Canada**, **Russia and Germany.**

- INSAT network at 74E is coordinated with **Israel.**

- INSAT-KU10 (55E) has been coordinated with **Turkey.**

- Coordination of INSAT-TTC series of satellite networks was undertaken with Holland, Malaysia, Germany, Cyprus, UK Tonga, UAE, Turkey and Luxembourg Administration.

- Coordination of MMI satellite networks was undertaken with USA, France, Germany, Australia, Belarus, Canada, Iran, Japan, Korea, Pakistan, Russia and Spain.

- Coordination of INSAT-NAVR (83) E Satellite Network has been taken up with the Administration of Russia, Thailand, Turkey, China, Cyprus, France, Israel, Malaysia, Norway and Papua New Guinea.

- Coordination of INSAT-KAUHF(74) E Satellite Network has been taken up with the Administration of U.K. Russia, Italy, Germany, Belgium, Austrlia and USA.

- Coordination of INSAT-KAUHF series of Satellite Network at 74E, 83E and 93.5E have been taken up with the Administration of Luxembourg, Sweden and Turkey.

- Coordination of INSAT-EXK82.5E E Satellite Network has been taken up with the Administration of Jordon

- Coordination of INSAT-NAVR series of satellite network has been taken up with the Administration of Cote' d Ivory, Cyprus, China, Egypt, France, Holland, Israel, Korea, Lao, Luxembourg, Malaysia, Nigeria, PNG, Russia, Singapore, Turkey, Tonga, UK, Saudi Arbia and UAE.

- Coordination with Administration of Indonesia has been taken.

- Coordination with Administration France, Russia, USA have been undertaken for INSAT-KU11 series of satellite network.

4.4.3 Coordination with ITU

Notifications:-

Frequency notices for registration requests INSAT-TTC(55)E, INSAT-TTC(74)E, and INSAT-TTC(93.5)E satellite networks has been forwarded to BR for publication in BR IFIC of Radiocommunication Bureau and the same were published by BR in concerned special section of BR IFIC.

Frequency notices for registration requests for INSAT-NAV-A-GS (NGSO) satellite networks has been forwarded to BR for publication in BR IFIC of Radiocommunication Bureau and the same were published by BR in concerned special section of BR IFIC.

Frequency notices for registration requests for TWSAT (NGSO), INSAT-NAV(55)(55E), Mars Mission of India(MMI), INSAT-G5(74), INSAT-MET(82)E, INSAT-KU11(74)E and INSAT-KAUHF(74) satellite networks has been forwarded to BR for publication in BR IFIC of Radiocommunication Bureau.

Administrative Due-diligence:-

Administrative Due-diligence i.r.o. satellite networks INSAT-TTC(55)E, INSAT-TTC(74)E, INSAT-TTC(93.5)E, INSAT-TTC82E, INSAT-MET(82)E, INSAT-G5(74), INSAT-KU11(74)E and INSAT-NAV(55) have been forwarded to ITU for publication in BR IFIC of Radiocommunication Bureau and the same were published by BR in concerned special section of BR IFIC.

Co-ordination Request:-

CR/C in respect of INSAT-NAVR (83) was published in BR IFIC 2746.

CR/C coordination request i.r.o. INSAT-NAVR series of satellite network at location 32.5E, 83E, 120.5E, 121.5E, 123.5E, 126.5E, 127.5E, 129.5E were submitted to ITU.

CR/C coordination request i.r.o. INSAT-KU12 (63) E (63E), INSAT-NAV (93.5) were submitted to ITU.

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Advanced Publication Information:

Advanced Publication Information MOD-API i.r.o. INSAT-NAVR series and MMI (NGSO) satellite network has been sent to BR for publication in IFIC and the same were published by BR in concerned special section of BR IFIC.

Advanced Publication Information of MMI (NGSO), INSAT-KA-48E, INSAT-KA-55E, INSAT-KA-61E, INSAT-KA-66E, INSAT-KA (74), IND-SATS-48E and INSAT-KA-107.5E satellite network has been sent to BR for publication in IFIC and the same were published by BR in concerned special section of BR IFIC.

Recording of assignment of Earth station associated to INSAT-1C and INSAT-ID in MIFR replacing space station INSAT2 (93.5) and INSAT2 (83) satellite networks.

BSS Plan as per Appendix-AP30/30A:- BSS Plan modification and associated feeder links i.r.o. INSAT-EXC (48E), INSAT-EXC (82E), INSAT-EXC (83E) and INSAT-EXC (55) E were submitted to BR

Protection of Indian space, Terrestrial and Radio Astronomy Services from the Satellite Networks of other countries.

Advanced Publication Information (**API/s)** published in BR IFIC in respect of satellite networks of **Canada, Ukrain, France, Germany, Indonesia, China, Japan, Azerbaijan, Israel, Vietnam, Lao, Spain, Russia, Belarus, United Kingdom, Cyprus, Pakistan, Kazakhstan, Mangolia, Norway, Slovenia, UAE and Saudi Arabia** Administrations were objected in view of existing and planned INSAT satellite networks.

Coordination requests (CR/Cs):- Frequency assignments published in BR IFIC in respect of satellite networks of Armenia, **Russia, UK, Cyprus, Australia, Korea, Turkey, Japan, PNG, Luxembourg, Indonesia, France, China, USA, UAE, Israel, Azerbaijan, Kazakhstan, Vietnam, Belarus, Thailand, Germany, Holland, Lao, Spain, Qatar, Ukrain and Saudi Arabia Administrations** were objected in view of existing and planned INSAT satellite networks.

Frequency notices for registration (Part I-S):- Frequency assignments published in BR IFIC in respect of satellite networks of **Spain, Thailand, Saudi Arabia, Russia, Korea, Pakistan, Japan, Israel, Morocco, Sweden, USA, Malaysia, China, Indonesia, Thailand, France, Turkey, U.K. Monaco and Australia** 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, France, Sweden, Holland, Malaysia, Spain and Armenia** 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 **Israel, PNG, Russia, Bangladesh, Morocco, Holland, UAE, France, Malasia and**

Turkey Administration were objected in view of existing and planned INSAT satellite networks

4. Conferences

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

World Radiocommunication Conference (WRC-15)

National Preparatory Committee has been constituted for WRC-15 to coordinate and harmonize the view of stakeholders to finalize national viewpoints on various agenda items of WRC-15.

5. PROJECT IMPLEMENTATION

The project Design, Supply, Installation & Commissioning of "National Radio Spectrum Management & Monitoring System (NRSMMS)" has been implemented by the WPC Wing. Under the project, spectrum management and monitoring functions have been automated with a view to making these activities effective and efficient.

Arbitration Tribunal for settlement of disputes relating to NRSMMS Project between M/s HFCL, India and WPC Wing, Department of Telecommunications, Ministry of Communications & IT has been set up. The Arbitration Tribunal passed the Order during 7th sitting stating that Arbitration proceedings shall continue in accordance with law. The Arbitration Tribunal intimated the schedule for further proceedings. The department has filed the Statement of Claim on 22.08.2013. The Arbitration Tribunal conducted its 8th sitting in March 2014.

Annual Maintenance Contract for the ASMS software and hardware has been awarded to National Informatics Centre (NIC).

The tender has been issued for replacement of batteries of UPS installed for ASMS Server.

Maintenance work of MMS Vehicles and repair of Equipments (e.g. 15 nos. of Spectrum Analyzers and 4 nos. of EB 200 Receivers) have been carried out.

Redesigning of WPC website as per the Guidelines for Indian Government Website (GIGW) by NIC is under process.

Achievements of WPC Wing

Achievements	Actual Achievement during April-2012 to March-2013	Actual Achievement during April-2013 to March-2014
1.1 Radio Frequency Spectrum Management		
• **New Radio Frequency authorized to various users**	19,340	12,410
• **Frequency assignments intimated to Radio-communication Bureau of ITU for registration**	2688	588
• **Radio Frequency Assigned for visits of VVIPs**	62	104
• **SACFA (Standing Advisory Committee on Frequency Allocations) meeting held**	01	01
• **Inter-departmental meetings held**	12	12
• **Sites cleared for new wireless stations**	2,13,501	2,04,144
1.2 Wireless Licences Issued		
• **No. of Import Licences Issued**	2877	2389
• **No. of Licences issued to new Wireless Stations**	88,558	80,906
• **No. of Licences Renewed (for Wireless Stations)**	71,955	57,944
1.3 Certificate of Proficiency (COP) Examination/Licences		
• **No. of COP Examination conducted**	66	66
• **No. of candidates admitted**	16,582	9,654
• **No. of Licences issued**	3170	2339
• **No. of Licences renewed**	5004	4215
• **No. of Licences issued to New Radio Amateur Stations**	280	366
• **No. of Licences renewed for Old Radio Amateur Stations**	410	414

4.5 Wireless Monitoring Organisation

Wireless Monitoring Organization continues to ensure 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**. **01-04-2012 to 31-03-2013** and **detailed Achievements during 01-04-2013 to 31-03-2014** are as given below:-

S. No.	Particulars	Actual achievements during 01-04-2012 to 31-03-2013	Actual achievements during 01-04-2013 to 31-03-2014
1.	Monitoring Assignments Handled.	10985	10132
2.	No. of Wireless Transmission monitored.	116419	109320
3.	Technical assistance to users to maintain their operation within specified standards.	602	731
4.	Infringements communicated to various wireless users for remedial action.	2497	4008
5.	Channel days utilized for Radio Monitoring.	5981	5375
6.	No. of Wireless Stations Inspected.	2211	4948
7.	No. of Radio Noise measurements.	355288	133926
8.	No. of high priority interference complaint resolved.	133	190
9.	No. of standard interference complaint resolved.	3	44
10.	Man days devoted for high level technical work.	498	480
11.	No. of training courses conducted.	08	05
12.	No. of man days for training.	690	575

4.5.1 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*.

4.5.2 Major functions of Wireless Monitoring Organisation (WMO)

The major functions of the WMO are as under:

- Resolution of the harmful interference;
- Monitoring for identification of frequency sub-bands for introduction of new services and/or for additional allocation to existing services;
- Monitoring for spectrum recovery — unused/ under-used frequency authorizations;
- Monitoring for ensuring adherence to licensing conditions;
- Monitoring / measurements for sharing studies;
- Assistance to domestic wireless users;
- Assistance to foreign administrations;
- Participation in special monitoring campaigns of the International Telecommunication Union;
- 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;
- Inspection of licensed installations; and
- Monitoring of space emissions to protect authorized satellite transmissions.

4.5.3 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, and (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.

- After having completed all the formalities, six new Wireless Monitoring Stations have been established at Bhubaneswar, Dehradun, Lucknow, Patna, Raipur & Vijayawada under 11th Five Year Plan (2007-12). One technical staff has been posted at each of six new monitoring stations to procure the necessary facilities for running the office. The technical infrastructure for these six additional Wireless Monitoring Stations would more effectively address the monitoring needs of public mobile and broadcasting services than what is currently available to other Wireless Monitoring Stations. To this end, WMO has initiated the process of finalizing tender document after the necessary approval by competent authority for the procurement "Six Vehicle mounted Monitoring Terminals with Portable Monitoring equipments and network analysis and coverage measurement equipments". The expected cost of these facilities is about `28.0 crore and the procurement is to be effected in 2013-14.

- The case for the procurement of land for the new Wireless Monitoring Stations was taken up with the respective State Governments in 2007. WMO has already procured land, at Bhubneshwar, Dehradun & Naya Raipur from the respective State Govts. for establishing Wireless monitoring Stations. WMO is also pursuing the matter for transfer of spare land/assets with BSNL at WMS's Bangalore,Hyderabad,Ranchi and Patna.

- WMO effectively and efficiently addresses new monitoring challenges emerging from the increasingly crowded radio frequency spectrum. WMO has taken steps to introduce new technologies and capacity-building. As for new technologies, procurement of software and hardware has already been initiated. Intensive training on monitoring as well as information technology is aimed at capacity-building. These two aspects are being jointly handled by the Monitoring Headquarter and Training & Development Centre, New Delhi.

- Satellite Monitoring Earth Station at Jalna (Maharashtra) continues the monitoring of signals from all satellites located in the Geo-arc of interest to India. Its measurement functionality is planned to be enhanced in the near future.

- Wireless Monitoring Stations have started functioning from the newly constructed buildings at Bhopal & Visakhapatnam. The construction of the office buildings is in progress at WMSs Jallandhar, Mangalore and Siliguri. Construction of office building of Wireless Monitoring Station, Mangalore is in completion stage. The land dispute in respect of WMS Goa has been resolved with the intervention of Hon'ble Chief Minister of Goa. WMO is initiating action to construct new office building for WMS Goa.

The review of the performance for the year 2012-13 and 2013-14 is placed at **Annexure - "N"**.

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

A. Public Access.

(I) Village Public Telephones

As on 31.01.2014, 582342 out of the 593601 inhabited villages (i.e. 98.10%) 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 newly 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. Rollout period for the scheme is up to 31 March 2014. It is likely to be extendedup to 31 March 2015.

c) Provisioning of VPTs under Bharat Nirman –I

Agreements were signed with BSNL in November 2004 to provide subsidy support for provision of VPTs in 62,302 uncovered villages in the country excluding those villages having population less than 100, those lying in deep forests and those affected with insurgency.

The provision of VPTs in these villages has been included as one of activities under Bharat Nirman Programme. 62101 VPTs have been provided under this scheme till the closure of rollout period on 31.08.2012. Validity of the Agreements for the Scheme has also expired on 09.11.2012.

Remaining villages of the scheme would be provided with VPT facility under USOF scheme of VPTs in Newly Identified uncovered villages as per Census 2001.

The targets of the scheme are being reconciled considering the left out villages of VPT schemes of Bharat Nirman-I and MARR replacement, additional

2. Shared Mobile Infrastructure Scheme:

A Scheme has been launched by USO Fund to provide subsidy support for setting up and managing 7353 infrastructure sites/ towers in 500 districts spread over 27 states for provision of mobile services in the specified rural and remote areas, where there was no existing fixed wireless or mobile coverage. Villages or cluster of Villages having population of 2000 or more and not having mobile coverage were taken into consideration for installation of the tower under this scheme. The agreements effective from 01.06.2007 were signed with the successful bidders in May 2007, which were valid till November, 2013.

Status:

As on 30.11.2013 i.e. till the closure of the scheme, 7317 towers i.e. about 99.51% have been set up. The infrastructure so created is being shared by three service providers for provision of mobile services. 16254 BTSs (Base Transceiver Stations) have been commissioned by Service Providers at these towers for provisioning of mobile services.

3. Wireline Broadband Scheme:

USOF has signed an Agreement with BSNL on January 20, 2009 under this Scheme which was launched to provide wire-line broadband connectivity to rural & remote areas by leveraging the existing rural exchange infrastructure and copper wire-line network. This scheme is being implemented at pan-India level. The objective is to make the rural and remote areas broadband enabled by facilitating the service providers in creating Broadband infrastructure. The speed of each of the broadband connections shall be at least 512 kbps always on, with the capability to deliver data, voice and video services in the fixed mode. The rural broadband connectivity will cover Institutional Users, such as Gram Panchayats, Higher Secondary Schools and Public Health Centres, as well as Individual Users, and located in the villages.

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 5-years, i.e., by 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. 1500 crore in 5 years' time that includes subsidy for about 9 lakh broadband connections, CPEs, computers/computing devices and Kiosks.
Under this scheme, as of March 2014, a total of 589783 broadband connections and 14294 kiosks have been provided.

4. Optical Fibre Network Augmentation, Creation and Management of Intra-District SDHQ-DHQ OFC Network in service area of ASSAM

This Scheme has been launched to provide sufficient back-haul capacity to integrate the voice and data traffic from the access network in the rural areas to their core network by strengthening the OFC network. This scheme considers OFC Network augmentation between the blocks' HQ and Districts' HQ to begin with.

USOF, through this Scheme, shall provide subsidy support for augmentation, creation and management of intra-district SDHQ-DHQ OFC Network on the condition that it will be shared with other Telecom Operators at the rates prescribed in the Agreement. Assam has been taken up first for implementation. The tender for Assam was floated on 30.10.2009 and BSNL had been declared successful at the subsidy quote of Rs. 98.89 crore and subsequently, an Agreement has been signed with BSNL on 12.02.2010 to implement the scheme in Assam.

Salient Features of the Scheme: This OFC Scheme would be undertaken on BOO model, i.e. build, operate & own basis, and accordingly, BSNL would build, operate, own and manage all the equipment/infrastructure for the provisioned intra-district augmented/created OFC Transport network to connect 354 total locations in Assam in total 27 Districts.

All locations are to 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, in all districts of

ASSAM within 18 months from the date of signing of the Agreement. The Agreement shall be valid for a period of seven 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.

As of November 2013, about 302 nodes have been installed (Out of 354) under the current scheme.

7. DISBURSEMENT STATUS

(i) Rs. 625 Crore was optimally disbursed during the financial year 2012-13 against the budgetary allotment of Rs 625 Crore (RE).

(ii) A budgetary allocation for the financial year 2013-14 (BE and RE) of Rs. 3000 Crore was received for various USOF Schemes. As on 31.3.2014, Rs 2163.45 crore has been disbursed.Thus Rs. 836,54,78,786 has been surrendered during the year F/Y 2013-14 due to the following reasons:

(A) The payment as expected could not be made to the implementing agencies by BBNL due to non-achievement of desired target by participating CPSUs and delay in tendering process & consequently in work execution by them.

(B) Scheme of provision of Mobile Services in Areas identified by MHA, Govt. of India in Left Wing Extremist (LWE) affected areas is still under approval.

(iii) A review of performance for the year 2012-13 and FY 2013-14 is appended as Annexure "O"

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 924.00 lakh GSM connections till 31.03.2014.
3G services were launched commercially on 27th February 2009 in selected cities and the same is available in 1982 cities as on 31.03.2014.

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 99.65 lakh wireline broadband connections as on 31.03.2014. 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 2012-13" is indicated at Annexure - 1.

The target & achievement up to March, 2014 with respect to "Outcome Budget 2013-14" is indicated at Annexure -2.

Targets: - The physical targets & achievements for the year 2013-14 (RE) are as follows:

S. No.	Item	Target (2013-14)	Achievement (upto 31.03.2014)
1	Addition in GSM capacity (in lakh lines)	90	41.58
2	Addition in Broadband Capacity (in lakh ports)	16.1	0
3	Addition in OFC (in RKMs)	20,000	14,388
4	GSM Mobile connections (in lakhs)	80	-61.05
5	Broadband connections (Wire line+FTTH+EvDO+WiMAX) (in lakhs)	30	0.83

The review of the performance for the year 2012-13 and for the year 2013-14 is at **Annexure**

3.2 The financial outlay in respect of BSNL is given below:

(All figures are Rs. in Crore)

	Year	Outlay
BE	2013-14	5593.00
RE	2013-14	5196.02
BE	2014-15	5132.19

3.3 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 2013-14 is Rs.5196.02 crores.

The capital outlay for the year BE 2014-15 is Rs.5132.19 crores.

2. The target w.r.t. Outcome Budget for 2014-15 is enclosed as Annexure-3.

4.1 The physical targets for the year 2014-15 (BE) are as follows:-

S. No.	**Item**	Unit of measurement	Target (2014-15)
1	Addition in GSM capacity	In lakh lines	100
2	GSM Mobile connections	In lakhs	100
3	Broadband connections	In lakhs	30
4	Addition in OFC	RKMs	20,000
5	Replacement wireline Exchanges by NGN(Next Generation Network) Exchanges	In lakhs	5

Note: *****The work of NFS (Network for Spectrum) for 40,000 RKMs and NOFN (Broadband connectivity to 73,500 Gram Panchayats) are not included above as these projects are undertaken by BSNL as an executing agency and the ownership

as well as the capital expenditure of these projects is owned / funded by DOT / USOF.

3. Mechanism for monitoring physical progress

There is comprehensive performance measurement mechanism in BSNL to monitor the performance by the name GPMS (Gross 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.

4.7.2 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.

Targets: The physical targets for the year 2011-12 are as follows:

S. No.	Items	Annual Target	Achievement
1.	Net new connections including WLL, Cellular and broadband connections	7,00,000	4,45,026
2.	New Switching Capacity addition including capacity for WLL GSM, NGN ,IMS	0	0
3.	Deployment of DSLAM / FTTH	2,30,000	9,220
4.	Optical Fibre Cable (in Fiber Km)	60,000	38,478.98

The review of the performance is placed at **Annexure –"Q"**.

4.7.3 ITI LIMITED

- The paid-up Share Capital of the Company as on 31.12.2010 is ` 588 Crores, consisting of ` 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. A sum of ` 5.5 crore has been provided for RE 2013-14 and ` 6.00 crore has been provided in the BE 2014-15.

- Based on the seeking of Financial Assistance of ` 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.

4.7.4 TELECOMMUNICATION CONSULTANTS INDIA LIMITED

The recent volatile global economic and business environment has shaken business confience of the industry and pace at which the economy recovers will be significant for the global prospects for coming years. Despite global slowdown, TCIL faced new challenges with great determination and was able to maintain its overall profitability and achieved turnover of ` 708.21 crore. The standalone profit before tax increased to ` 19.87 crore as against ` 19.16 crore of previous year.

Orders secured during the year 2011-12 were of ` 1309 crore as against target of ` 900 crore and previous year's figure of ` 850 crore.

Company has developed a long term strategic plan to accomplish continued advancement and expansion. The strategy followed by the company to achieve the same is as follows:

i) Expanding the operations in Information Technology, Telecom as well as Civil infrastructure sector both in India and abroad.
ii) Acquiring State-of-the-Art Technology on a continuous basis and maintain Leadership.
iii) Enter areas of cost – effective network technologies for building new Telecom & Information Technology networks and upgrading legacy networks.
iv) Develop Telecom & Information Technology Training infrastructure in countries abroad.

The targets for turnover including other income have accordingly been kept as under:-

(` in crores)

2013-14	2014-15	2015-16	2016-17
966	1028	1200	1400

The performance highlights were as under:-

A. Standalone

(` in crores)

Particulars	2011-12 Actual	2012-13 RE	2012-13 Actual
Turnover	680.79	1014.76	708.21
Profit before Tax	19.16	21.00	19.87
Profit after Tax	8.03	14.52	15.76
Foreign Exchange Repatriation	13.77	15.00	19.64
Order Booking	1309.00	1000.00	447.00
Net Worth	426.58	452.72	441.15

B. Consolidated

(` in crores)

Particulars	2011-12 Actual	2012-13 RE	2011-12 Actual
Turnover including other income	1751.79	1902.90	1751.79
Profit before Tax	230.30	231.40	230.30

Order Booking 2013-14

During the year 2013-14, till August 2013, the Company has secured orders of over ` 245.00 Crore. The major orders booked during the year are as under:

- Work awarded for FTTH from Mobile Etisalat, Riyadh, KSA, for the value of ` 20.02 crs.
- Work awarded for Fiber works of Kems Zajill in Kuwait, for the value of ` 6.90 crs.
- Work awarded for OFC Service of NCELL Pvt. Ltd. In Nepal, for the value of ` 4.82 crs.
- Work awarded for Establishment of police control room with GIS and GPS equipment and vehicle tracking system in the city of Kanpur for UP Police Radio Headquarter, Lucknow, for the value of ` 6.58 crs.
- Work for laying of cable in Riyadh awarded by Saudi Electricity Company for the value of ` 76.32 crs.
- Civil works awarded by Rajasthan Urban Infrastructure Finance & Development Corporation Limited (RUIFDCO) for the value of ` 50.00 crs.
- Work awarded for Construction of Sport Stadium (Phase-II) at JNV, Raebareli, for the value of ` 14.00 crs.

Joint Venture

TCIL has the following Joint Venture companies:

ICSIL: Intelligent Communication Systems India Ltd.

TBL: TCIL Bellsouth Ltd.

TTL: Tamilnadu Telecommunications Ltd.

UTL: United Telecom Ltd. in association with MTNL, VSNL and Nepal Ventures Pvt. Ltd (NVPL).

BHL: Bharti Hexacom Ltd.

TSCL: TCIL Saudi Co. Ltd.

TCNL

TCIL Oman Ltd

TSCNL is presently not in operation while ICSIL and TTL is presently a subsidiary by virtue of TCIL having majority of Directors on its Board. On consolidating the projected results of these companies, Consolidated Profit & Loss position shall be as under:-

Consolidated financial results of JV companies:

(**Rs** in Crore)

Joint Venture Company	Turnover		Profit		TCIL's Share			
					Turnover		Profit	
	2013-14	2014-15	2013-14	2014-15	2013-14	2014-15	2013-14	2014-15
TCIL	950.06	1,000.24	8.33	20.00	950.06	1,000.24	8.33	20.00
ICSIL	55.36	58.12	2.35	2.47	55.36	58.12	2.35	2.47
TBL	1.49	1.57	0.49	0.52	0.67	0.70	0.22	0.23
TTL	17.16	18.01	(8.90)	(9.35)	17.16	18.01	(8.90)	(9.35)
Bharati Hexacom	4001.13	4,201.19	848.61	891.04	1200.34	1,260.36	254.58	267.31
UTL	58.09	60.99	14.65	15.38	15.49	16.26	3.91	4.10
Total	**5,083.28**	**5,340.13**	**836.23**	**889.30**	**2,239.07**	**2,353.70**	**252.68**	**276.56**

4.7.5 DOT Schemes

4.7.5.1 OFC based network for Defence Services

The Cabinet Committee on Infrastructure (CCI) in its meeting held on 3rd December 2009 approved the following:

- Approval of setting up of an alternate exclusive, dedicated OFC based communication network for Defence services for release of spectrum.
- Financial approval of Rs 9175.16 crore (Rs 1077.16 Cr for Air Force and Rs 8098.00 Cr for Army & Navy) for laying of alternate communication network for Defence Services in a period of 36 months and approved budgeting of the same in the budget of DoT.
- The assets created will belong to DoT during the currency of the project and after the completion of the Project these assets will be transferred to Ministry of Defence as book transfer.

Further, the CCI, in its meeting held on 3rd July 2012, has given the financial approval of Rs. 5236 crore over and above Rs 8098 crore, already approved by CCI on 03.12.2009, for laying of alternate communication network for Defence Services in a period of 36 months .

The Air Force part of the OFC network (AFNET) has been dedicated to the nation on 14.09.2010 by Air Force with and the Project for Army and Navy has been started in 2010-11.

The details of the achievements under these projects for the years 2012-13 and 2013-14 are placed at Annexure-"R".

Annexure – L

TELECOMMUNICATION ENTINEERING CENTRE

Performance for the year 2012-13

(` in Crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2012-13	Quantifiable / Deliverables	Process/ Timelines	Achieved from 1-4-12 to 31-3-13	Remarks
1	2	3	4	5	6	7	8
A. Core Activities (Figures in units)							
1	New Generic Requirements, Interface requirements and Service Requirements.	Preparation of new GRs / IRs		13	Yearly	11	
2	Review of GRs/ IRs	Revision of existing GRs / IRs		24	Yearly	18	
3	Preparation of Test Schedule/ Test Procedure	Preparation of Test Schedule		37	Yearly	29	
4	Type Approval	Certification to authorise use of equipment in telecom network		Not Defined		3	
5	Interface Approval Issued	Certification to authorise use of equipment in telecom network		Not Defined		62	
6	Certificate of Approval	Certification to authorise use of equipment in telecom network		Not Defined		21	
7	Revenue	Fee collection from testing		Not Defined		1.08	

Cont.. Annexure – L on next page

B	**Ongoing Project Activities**						
1	NGN Lab	To carry out testing and certification of NGN compliant transport equipment	2.0000			0	
2	NE Region	Satellite Based Broadband Network in NE Region				0	
3	SAR Lab	To carry out testing and certification of Mobile equipment about Specific Absorption Rate (SAR)				1.74	
4	Procurement of EMF Measuring Instruments	EMF Testing				0	
	Total		**2.0000**			**1.7400**	

[Contd…Annexure – L]

TELECOMMUNICATION ENTINEERING CENTRE
Performance for the year 2013-14

(` in Crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2013-14	Quantifiable / Deliverables	Delivered (1.3.13 to 31.3.14)	Remarks /
1	2	3	4	5	6	7
A.	**Core Activities (Figures in units)**					
1	New Generic Requirements, Interface requirements and Service Requirements	Preparation of new GRs / IRs		15	13	
2	Review of GRs/ IRs	Revision of existing GRs / IRs		23	22	
3	Preparation of Test Schedule/ Test Procedure	Preparation of Test Schedule		52	49	
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	71	
6	Certificate of Approval			No target defined	6	
7	Collection of revenue by Test fee (Rs.)			No target defined	1.05	
B.	**Project Activities**					
1	NGN Labs	To carry out testing and certification of NGN complaint CPEs and terminals	2.2300	The amount was asked to make the pending	0.0000	
2	NE Region	Satellite based Broadband network			0.0000	

		EMF Measuring Instruments		payments after completion of work	0.0000	
3	Procurement of EMF Measuring Instruments	EMF Testing		Budget was not allocated	0.0000	
4	SAR Lab Mumbai	To carry out testing and certification of Mobile equipment about Specific Absorption Rate (SAR)		Budget was not allocated	0.0000	
	Total		**2.2300**		**0.0000**	

WIRELESS PLANNING CO-ORDINATION
Performance for the year 2012-13 (up to 31st December 2012)

(` in Crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2012-13 (R.E.)	Quantifiable Deliverables/ Physical Outputs	Processes/ Timelines	Achievements w.r.t Col (5) as on 31-12-2012	Remarks/ Risk Factors
1	2	3	4	5	6	7	8
1	National Radio Spectrum Management and Monitoring System (NRSMMS)	Spectrum Management and monitoring functions automated with a view to making spectrum management process more transparent, effective and efficient	1.50	Follow-up activities after Termination of Super High Frequency (SHF)	During 2012-13	1. Arbitration Tribunal for settlement of disputes relating to NRSMMS Project between M/s HFCL, India and WPC wing, DoT has been set up. The Tribunal heard the matter four times by December 2012 and it is still under consideration of Tribunal. 2. The case for repairing of UPS unit installed for ASMS server and maintenance of V/UHF MMS vehicles have been processed and repairing work has also been done. 3. Case for finalization of contract to handover maintenance of ASMS to NIC is being processed	
		Total	**1.50**				

Annexure – N

WIRELESS MONITORING ORGANISATION
Performance for the year 2012-13

(Rs in Crore)

Sl. No.	Name of Schemes/Programmes	Objective/ Outcome	Outlay As per RE 2012-13			Target (April, 12-Mar,13)		Achievement during (April, 12-Mar, 13)		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**		N/A	**Nil**	Nil	N/A	N/A	N/A	N/A	**No financial expenditure committed on any technical schemes due to the reasons given against each scheme.**
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 was submitted to WPF in September, 2010 has been vetted by the WPF. Further estimated approval of TC will be sought shortly for this procurement.
1.2		04 Nos. SHF Vehicle mounted & portable monitoring terminals	N/A	Nil	Nil	100%	100%	Nil	Nil	A draft T.C Memo for procurement of SHF Microwave Terminals is under consideration in the Ministry

From pre-page:

(Rs in Crores)

	Name of Schemes/Programmes	Objective/ Outcome	Outlay As per RE 2012-13			Target (April, 12-Mar,13)		Achievement during (April, 12-Mar,13)		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
1.3	**Mobile Monitoring, including Direction Finding, facility (proposed 12th FYP outlay 220 cr.): Procurement of**	06 Nos. Network analyzers and coverage measurement equipments.	N/A	Nil	Nil	Nil	Nil	Nil	Nil	Pending approval of projects at S.No. 1.1 & 1.2 above, which are unlikely to be completed in the current F.Y, with little expenditure, if any, on them, in the current F.Y. Hence, WMO has submitted draft T.C memo for procurement of these equipments /items worth 48 crore along with proposals under scheme at S.No.2.1 to 2.5 below, which is under examination by WPF
		Remote monitoring terminals	N/A	Nil	Nil	Nil	Nil	Nil	Nil	
1.4		03 Nos. HF transportable DF terminals	N/A	Nil	Nil	Nil	Nil	Nil	Nil	
1.5		12. Nos. V/UHF transportable DF terminals	N/A	Nil	Nil	Nil	Nil	Nil	Nil	
1.6		12 Nos. small sized operational vehicles available at DGS&D	N/A	Nil	Nil	Nil	Nil	Nil	Nil	
2.1	**Specialised hardware/ software and auxiliary components (proposed 12th FYP outlay 80 cr. procurement of:**	Standard Horn antennas (about 1 to 50 GHz)	N/A	Nil	Nil	Nil	Nil	Nil	Nil	Please refer remarks above.
2.2		Amplifiers (about 10 KHz to 50 GHz)	N/A	Nil	Nil	Nil	Nil	Nil	Nil	
2.3		1 No. spectrum-cum-vector signal analyzer (50 GHZ)	N/A	Nil	Nil	Nil	Nil	Nil	Nil	
2.4		Software for EB 200 receiver decoding HF emissions	N/A	Nil	Nil	Nil	Nil	Nil	Nil	
2.5		RF Switches, RF Filters, combiners, spliters, diplexers, etc. and add on for software defined radio	N/A	Nil	Nil	Nil	Nil	Nil	Nil	

From pre-page:

(In Crores)

Sl. No.	Name of Schemes/ Programmes	Objective/ Outcome	Outlay As per RE 2012-13			Target (April, 12-Mar,13)		Achievement during (April, 12-Mar,13)		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
3.	**Manpower requirement** Creation of Project Implementation Unit (PIU).	To implement the technical schemes.	N/A	**@**	Nil	N/A	N/A	N/A	N/A	Proposal will be submitted after approval of scheme at 1.1 above. @ Funds to be met from the proposed outlay for scheme at 1.1 above.
4.	Misc. Expenses i.e. Salary, Office & Travel etc.	Expenditure under the different heads including salary in respect of 6 new WMSs .	N/A	0.5	Nil	100%	N/A	0.4128	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	**0.50**	Nil	**100%**		**0.4128**		
	Civil Works Total (B)	Miscellaneous Civil works such as procurement of land, construction of office buildings, staff quarters & ancillaries.	N/A	**3.0**	Nil	**100%**	It is difficult to physic-ally quantify different Civil works under various stages of execution by CPWD	**2.1998**	It is difficult to physic-ally quantify different Civil works under various stages of execution by CPWD	(i) Construction of office buildings by CPWD at WMSs Jalandhar, WMS Siliguri & WMS Mangalore is under progress (ii)Settlement of claim worth Rs.90 lakh for const. of boundary wall by CPWD at IMS Kolkata pending for want of clarification from CPWD sought by WFD. (iii) Acquisition of land/ assets from BSNL for WMSs at Bangalore, Hyderabad, Patna & Ranchi under consideration by BSNL and (iv) Allotment of land for WMS Dibrugarh in North-East is under consideration of the State Govt.
	G. Total (A)+ (B)		N/A	**3.5**	Nil	**100%**		**2.6126**		

[Contd…Annexure – N]

WIRELESS MONITORING ORGANISATION
Performance for the year 2013-14

(In Crores)

Sl. No.	Name of Schemes/Programmes	Objective/ Outcome	Outlay 2013-14			Target (April, 13-Mar-14)		Achievement during (April, 13-Mar-14)		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 Scheme**		N/A	**Nil**	Nil	N/A	N/A	N/A	N/A	
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 was submitted to WPF in September, 2010 has been vetted by the WPF. Further estimated approval of TC will be sought shortly for this procurement.
1.2		04 Nos. SHF Vehicle mounted & portable monitoring terminals	N/A		Nil	100%	100%	Nil	Nil	A draft T.C Memo for procurement of SHF Microwave Terminals is under consideration in the Ministry

From pre-page: **(In Crores)**

	Name of Schemes/Programmes	Objective/ Outcome	Outlay 2013-14			Target (April, 13-Mar-14)		Achievement during (April, 13-Mar-14)		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	Member (T) has accorded the administrative approval to this proposal and the draft Bid document for this procurement was submitted to WPF for vetting. WPF has advised that a committee may be constituted to examine the draft bid document. Committee has already examined the draft Bid document and its recommendations are being forwarded to WPF.
3.1	**Specialised hardware/ software and auxiliary components (proposed 12th FYP outlay 80 cr. procurement of:**	06 Nos. Network analyzers and coverage measurement equipments.	N/A	1.5	Nil	100%	100%	1.2231	Nil	Two nos.of Real time spectrum analysers have been procured through DGS&D for Training and Development Centre and ISMES Jalna
3.2		Real time Spectrum Analysers	N/A		Nil	Nil	Nil	Nil	Nil	

Contd…

From pre-page:

(In Crores)

Sl. No.	Name of Schemes/ Programmes	Objective/ Outcome	Outlay 2013-14			Target (April, 13-Mar 14)		Achievement during (April, 13-Dec-13)		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	Proposal will be submitted after approval of scheme at 1.1 above. @ Funds to be met from the proposed outlay for scheme at 1.1 above.
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	0.4765	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	**2.5**	Nil	**100%**		**1.6996**		
	Civil Works Total (B)	Miscellaneous Civil works such as procurement of land, construction of office buildings, staff quarters & ancillaries.	N/A	**4.0**	Nil	**100%**	It is difficult to physic-ally quantify different Civil works under various stages of execution by CPWD	**3.4507**	It is difficult to physic-ally quantify different Civil works under various stages of execution by CPWD	(i) Construction of office buildings by CPWD at WMSs Jalandhar, WMS Siliguri & WMS Mangalore. (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) Construction of staff quarters by CPWD at ISMES Jalna.(vi) Allotment of land for WMS Dibrugarh in North-East is under consideration of the State Govt.
	G. Total (A)+ (B)		N/A	**6.5**	Nil	**100%**		**5.1503**		

Annexure - O

UNIVERSAL SERVICE OBLIGATION FUND
Performance during 2012-13 and 2013-14

(` Rs in crore)

Sl. No.	Name of Activity	Total physical targets for the scheme		Physical outcome by 31-3-2013 (Progressive)	Financial year 2012-13					Financial year 2013-14	
										Annual Targets	
		Original	Revised		Financial Outlay (In crores)	Physical Ofutcome	Financial (Rs. In Crores)- Original	Financial (Rs. In Crores)- Revised	Physical- Original		
1	2	3	4	5	6	7	8	9	10		16
1	Operation & Maintenance of VPTs				0.07		0.01	0.48			
2	Replacement of MARR VPTs (Total)	182766	185121	184800 (DSPT-370)	40.22	9(DSPTs-0)	1.25	4.68			
3	Provision of RCPs	43409	40694		-0.13		0.09	0.01			
4	VPTs in Uncovered villages as per census 1991	66822	62302	62101 (DSPT-3755)	3.43	13 (DSPTs-0)	6.26	1.19			
5	RDELs installed between 01.04.02 to 31.03.05				0.00		0.05	0.03			
6	RDELs installed between 01.04.05 and 31.03.07 and (extended up to 31.3.2010)				-0.25		5.12	-6.23			
7	Shared Infrastructure Support (Towers & Mobile services) [Phase-I]	7363	7353	7317	94.75	11	78.61	64.40	36		Scheme has been closed on 30.11.2013
	VPTs in the newly identified uncovered villages as per Census 2001	62443	62443	55233 (DSPT-923)	8.26	2400 (DSPTs-5)	21.16	22.04	7210 (DSPT-1704)		
8											
9	Support for Rural Wireline Household DELs installed prior to 01.04.2002						0.00	1500.00			
10	Wireline broadband connectivity in rural and remote areas	861459 BB connections and 27789	888832 BB connections and 28672 kiosks	470299 BB connections & 11443 Kiosks	70.66	111324 BB Connections & 2080 Kiosks	65.30	60.48	2.5 Lakh BB Connections & 10000 Kiosks		

		kiosks									
11	Solar Mobile Charging Facilities	5000	5000		2.22		2.20	1.95			
12	Augmentation, creation & management of OFC Assam service area	OFC netwrok augmentation between SDHQ & DHQ in Assam	OFC netwrok augmentation between SDHQ & DHQ in Assam 354 OFC nodes to be installed	302	0.77	113	3.10	0.00	Augmented OFC N/W in 27 Dists.	Scheme launched on 12.2.10 & total 354 OFC nodes to be installed	
13	National Optical Fibre Network (NOFN) For providing Broadband connectivity to 2,50,000 (Apprrx.) Village Panchayats in the country through extending existing Optical Fibre Network	To connect 245748 village panchayats to 6599 Blocks	March 2014 100000 GPs March 2015 100000 GPS Sept 2015 50,000GPs	1. ROW signed with 16 States. 2. 59 GPs of pilot Project connected	405.00	1. ROW signed with 16 States. 2.59 GPs of pilot Project connected	2500.00	514.00	To connect 245748 village panchayats to 6599 Blocks	* 2. Survey completed for 519 Districts comprising of 175118 GPs 3. APO placed for 100 % quantity and POs placed for 50 % quantity of optical fibre 4. Tender for turnkey project of supply installation, mtce of GPON equipment has been approved	
14	Augmentation, creation & Management of OFC network in NE-I & NE -II (Earlier titled as SAs other than Assam)	OFC netwrok augmentation	OFC n/w augmentation between SDHQ &	NIL		NIL	77.60			Rollout yet to start.	

		between SDHQ & DHQ	DHQ in NE-1 & NE-II								
15	Providing Mobile connectivity in Left Wing Extrimism affected areas which are not covered by any service provider	provision of mobile service in about 2199 locations of LWE affected areas as identified by M/o Home Affairs					237.75	0.00		Scheme has been approved by the Cabinet on 04.06.2013. BSNL has been nominated to excute the project.	
16	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	NIL		NIL		0.00		Scheme yet to be launched	
17	Wireless Rural broadband connectivity to rural and remote areas	5000 Blocks	5.0 lakh villages	NIL		NIL		0.00		Scheme on hold due to conflict with rural rollout obligation of 3G/BWA bidders.	
18	Sanchar Shakti	Provision of mobile Value Added Services to					1.50	0.41		Agreements have been signed in four service areas.	

		rural women's SHGs for a period of one year									
19	Scheme for mobile communication services in Uncovered villages	Providing mobile communication services in 56000 inhabited uncovered villages								Scheme is under copnsideration of the Governemnt.	
	Total				**625.00**		**3000.00**	**2163.44**			
	Rounded off to				**625.00**		**3000.00**	**2163.44**			

1. 2.

Annexure – P

BHARAT SANCHAR NIGAM LIMITED
Performance for the year 2012-13

(` in crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Quantifiable Deliverables (Physical Targets)*	Actual Achievement (Physical) during 2012-13	Outlay 2012-13 (Rs. in Crores)**	Processes/ Timelines	Remarks / Risks / Constraints
1(a)	Mobile	To provide Mobile connections on demand	Total 100 lakh	39.96 lakh	Annual Outlay for 2533 cr.		
			1st Quarter 25 lakh	02.79 lakh	1st Qtr. 253 cr.		
			2nd Quarter 25 lakh	17.19 lakh	2nd Qtr.507 cr.		
			3rd Quarter 25 lakh	05.86 lakh	3rd Qtr. 760 cr.		
			4th Quarter 25 lakh	14.12 lakh	4th Qtr. 1013 cr.		
1(b)	Wireline & WLL	To provide DELs on demand	Total 0 lakh	(-) 33.24 lakh	Annual Outlay for 768 cr.		
			1st Quarter 0 lakh	(-) 12.72 lakh	1st Qtr. 77cr.		
			2nd Quarter 0 lakh	(-) 07.10 lakh	2nd Qtr. 154 cr.		
			3rd Quarter 0 lakh	(-) 06.19 lakh	3rd Qtr. 230 cr.		
			4th Quarter 0 lakh	(-) 07.23 lakh	4th Qtr. 307 cr.		
2	Broadband	To provide Multiplay i.e voice,video & data on demand and allied services	Total 75 lakh***	10.66 lakh	Annual Outlay for 853 cr.		
			1st Quarter 18.75 lakh	03.38 lakh	1st Qtr. 85 cr.		
			2nd Quarter 18.75 lakh	03.54 lakh	2nd Qtr. 171 cr.		
			3rd Quarter 18.75 lakh	03.26 lakh	3rd Qtr. 256 cr.		
			4th Quarter 18.75 lakh	0.48 lakh	4th Qtr. 341 cr.		

3	TAX	To provide connectivity for additional exchange equipment & provide POIs on demand	Total 0 lakh	0 KCTs	Annual Outlay for 52 cr.		
			1st Quarter 0 KCTs	0 KCTs	1st Qtr. 5cr.		
			2nd Quarter 0 KCTs	0 KCTs	2nd Qtr. 10 cr.		
			3rd Quarter 0 KCTs	0 KCTs	3rd Qtr. 16 cr.		
			4th Quarter 0KCTs	0 KCTs	4th Qtr. 21 cr.		
4	OFC &Transmission Network	To provide Transmission network for new exchange equipment & provide Bandwidth on demand	Total 30,000 RKMs	21507 RKMs	Annual Outlay for 1203 cr.		
			1st Quarter 7500 RKMs	1213 RKMs	1st Qtr. 120 cr.		
			2nd Quarter 7500 RKMs	1865 RKMs	2nd Qtr. 241 cr.		
			3rd Quarter 7500 RKMs	3937 RKMs	3rd Qtr. 361 cr.		
			4th Quarter 7500 RKMs	14491 RKMs	4th Qtr. 481 cr.		

Contd…Annexure – P

BHARAT SANCHAR NIGAM LIMITED
Performance for the year 2013-14

(` in crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Quantifiable Deliverables (Physical Targets)*	Actual Achievement (Physical) up to 31.03.2014	Outlay 2013-14 (Rs. In Crores)**	Processes/ Timelines	Remarks / Risks / Constraints
1(a)	Mobile	To provide Mobile connections on demand	Total 80 lakh	(-) 61.05 lakh	Annual Outlay for 2657 cr.		
			1st Quarter 20 lakh	(-) 30.92 lakh	1st Qtr. 266 cr.		
			2nd Quarter 20 lakh	0.60 lakh	2nd Qtr. 531 cr.		
			3rd Quarter 20 lakh	(-) 14.84 lakh	3rd Qtr. 797 cr.		
			4th Quarter 20 lakh	(-)15.88 lakh	4th Qtr. 1063 cr.		
1(b)	Wireline & WLL	To provide DELs on demand	Total 0 lakh	(-)24.10 lakh	Annual Outlay for 903 cr.		
			1st Quarter 0 lakh	(-) 06.79 lakh	1st Qtr. 90 cr.		
			2nd Quarter 0 lakh	(-) 07.15 lakh	2nd Qtr. 181 cr.		
			3rd Quarter 0 lakh	(-) 5.14 lakh	3rd Qtr. 271 cr.		
			4th Quarter 0 lakh	(-) 5.02 lakh	4th Qtr. 361 cr.		
2	Broadband	To provide Multiplay i.e voice,video & data on demand and allied services	Total 30 lakh	0.83 lakh	Annual Outlay for 671 cr.		
			1st Quarter 07.50 lakh	0.31 lakh	1st Qtr. 67 cr.		
			2nd Quarter 07.50 lakh	0.28 lakh	2nd Qtr. 134 cr.		
			3rd Quarter 07.50 lakh	0.09 lakh	3rd Qtr. 201 cr.		
			4th Quarter 07.50 lakh	0.15 lakh	4th Qtr. 268 cr.		

3	TAX	To provide connectivity for additional exchange equipment & provide POIs on demand	Total 0 lakh	0 KCTs	Annual Outlay for 21 cr.		
			1st Quarter 0 KCTs	0 KCTs	1st Qtr. 2 cr.		
			2nd Quarter 0 KCTs	0 KCTs	2nd Qtr. 4 cr.		
			3rd Quarter 0 KCTs	0 KCTs	3rd Qtr. 6 cr.		
			4th Quarter 0 KCTs	0 KCTs	4th Qtr. 8 cr.		
4	OFC &Transmission Network	To provide Transmission network for new exchange equipment & provide Bandwidth on demand	Total 20,000 RKMs	14,388 RKMs	Annual Outlay for 944 cr.		
			1st Quarter 5000 RKMs	1546 RKMs	1st Qtr. 94 cr.		
			2nd Quarter 5000 RKMs	2669 RKMs	2nd Qtr. 189 cr.		
			3rd Quarter 5000 RKMs	2375 RKMs	3rd Qtr. 283 cr.		
			4th Quarter 5000 RKMs	5538 RKMs	4th Qtr. 378 cr.		

Annexure – Q

MAHANAGAR TELEPHONE NIGAM LIMITED
Performance for the year 2012-13

(` in Crore)

S.No	Name of the Scheme / Programme	Objective / Outcome	Outlay 2012-13(RE)			Target Physical*	Achievement (2012-13)	Remarks
			Non Plan Budget	Plan Budget (Rs in crore)	Complementary Extra Budgetary Resources		Physical	
1	2	3	4(i)	4(ii)	4(iii)	6	8	9
Name of Unit: MTNL								
1	Net new connections including WLL, Cellular and broadband connections	Increase in Net new customers	_	_	_	650K**	(-) 751976	#
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	_	387.92	_	-	0.00	##
3	Deployment of DSLAM / FTTH					-	2,988	
4	Optical Fibre Cable (in Fiber Km)					30000	13893.56	-

5	IT related services	IT related Projects	_	56.56	_	-	-	-
6	Expansion in New Services Areas abroad and National acquisitions	Service in Overseas Operations	_	0.00	_	-	-	Subject to new overseas suitable opportunities
	Total		_	**444.48**	_		-	-

(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)# Even though Company has added around 434.788K new GSM Subscribers and also made a net addition of 78.751K in Broadband Subscribers during the year 2012-13, however, due to deletion of around 700K dormant GSM Subscribers (which were inactive for more than a year) for efficient utilization of numbering plan allotted by DoT, the net addition is in negative.

(iv)## These targets were fixed primarily for adding new capacity in GSM / 3G and broadband networks. However, since enough spare capacity in GSM / 3G and broadband networks was available and the services were available on demand , no new addition in the capacity was made.

Contd… Annexure – Q

MAHANAGAR TELEPHONE NIGAM LIMITED
Performance for the year 2013-14

Annexure-I

S.No	Name of the Scheme / Programme	Objective / Outcome	Outlay 2013-14			Target 2013-14*		Achievement for the year 2013-14		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	_	_	_	_	400K	_	1,88,935	#
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	_	389.18	_	389.18	0	361.20	0.00	##
3	Deployment of DSLAM / FTTH						0		432	
4	Optical Fibre Cable (in Fiber Km)						20000		4848.78	-
5	IT related services	IT related Projects	_	15.67	_	15.67	-		-	-
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		_	**404.85**	_	**404.85**		**361.20**	-	-

(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)# As decided vide (ii) above in Annual Plan, this does not include the deletion of 16,81,365 inactive (dormant) GSM Subscribers. This steps was taken for efficient utilization of numbering plan allotted by DoT.

(iv)## These targets were fixed primarily for adding new capacity in GSM / 3G and broadband networks. However, since enough spare capacity in GSM / 3G and broadband networks is available and the services are available on demand , no new addition in the capacity is made.

Annexure – R

DOT Schemes
Performance for the year 2013-14

(` in Crore)

S.No.	Name of the Scheme / Programme	Objective / Outcome	Outlay 2013-2014 (R.E)	Quantifiable Deliverables / Physical Outputs	Processes / Timeliness	Achievement w.r.t. Col.(5) as on 31.12.2013	Remarks / Risk Factors
1	2	3	4	5	6	7	8
1.	Technology Development & Investment Promotion (TDIP)	i.Technology Development like R & D and IPR Generation ii. Promoting manufacturing and export of telecom equipment and services iii. For promotional schemes like Telecom Centres of Excellence(TCOEs), National and International Participation in exhibitions iv. Promotion of telecom sector through conferences and exhibitions in India and abroad.	1.50	Providing technical assistance for promoting investment in the manufacturing sector, export of telecom equipments to the developing / underdeveloped countries, organizing Telecom events & other seminars and IPR Generation through Telecom Centres of Excellence (TCoE).	Ongoing activity		

Contd…Annexure – R

DOT Schemes
Performance for the year 2012-13

(` in Crore)

S.No.	Name of the Scheme / Programme	Objective / Outcome	Outlay 2012-2013 (R.E)	Quantifiable Deliverables / Physical Outputs	Processes / Timeliness	Achievement w.r.t. Col.(5) as on 31.3.2013	Remarks / Risk Factors
1	2	3	4	5	6	7	8
1.	Technology Development & Investment Promotion (TDIP)	i. Technology Development like R & D and IPR Generation ii. Promoting manufacturing and export of telecom equipment and services iii. For promotional schemes like Telecom Centres of Excellence(TCOEs), National and International Participation in exhibitions iv.Promotion of telecom sector through conferences and exhibitions in India and abroad.	1.50	i. 7th edition of India Telecom Exhibition and conference i.e. "India Telecom 2012" was organized with the objective of promoting and showcasing the capacities and opportunities in Indian Telecom Sector. ii. IPR Generation by TCOEs iii. Promotion of Telecom Export	2012-13	**i.** Successfully hosted India Telecom 2012 Event	

Contd…Annexure – R

DOT Schemes
Performance for the year 2012-13

(` in Crore)

S. No.	Name of Scheme/ Programme	Objective/Outcome	Outlay 2012-13 (R.E.)	Quantifiable Deliverables/Physical outputs	Processes/ Timelines	Achievements w.r.t. Col.(5) as on 31.03.2013	Remarks/Risk Factors
1	2	3	4	5	6	7	8
1	HRM FOR IP&TAFS i) Mid Career Training	**Five state mandatory training to IP&TAFS officers for capacity building and preparing them to shoulder the higher responsibilities.**	3.23	Three MCT IN 2012-13	During 2012-13	MCT-IV & MCT-II were successfully Completed.	
	ii) **Induction & In-service Course**	Probationary Training for Group A, Group B and C level officers to prepare them for the job assigned/to be assigned.	2.02	Conducted as per DoPT guidelines and National Training Policy..	During 2012-13	Training has been conducted as per schedule.	
	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.	0.75	Ongoing process.	During 2012-13	Work in progress.	
2.	Physical Infrastructure for NICF	DPR, construction of Boundary wall to prevent encroachment, approach road, development of Ghitorni Campus.	4.00	Preparation of DPF, Master Plan & Initial construction work.	During 2012-13	Final Draft of DPR submitted and work in progress.	

DOT Schemes

Performance for the year 2013-14

Contd…Annexure – R

(Rs in Crore)

S. No.	Name of Scheme/Programme	Objective/Outcome	Outlay 2013-14 (R.E.)	Quantifiable Deliverables/ Physical Outputs	Processes/ Timelines	Achievements w.r.t. Col (5) as on 31.03.2014	Remarks/ Risk Factors
1	2	3	4	5	6	7	8
1	HRM FOR IP&TAFS (i) Mid Career Training	Five stage training programmes for IP&TAFS officers	6.95	Three MCT in 2013-14	Full year	MCT-II has successfully completed.	
	HRM FOR IP&TAFS (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.	3.40	Training outcomes can not be quantified	Full Year	Training conducted as per schedule.	
	HRM FOR IP&TAFS (iii) Institutional & capacity building	Ongoing process.	0.10	Training and development w.r.t. columns 3.	Full Year	Work in progress.	
2	Physical Infrastructure for NICF	Building of NICF campus at Ghitorni, New Delhi Policy.	3.00	Creation of training infrastructure.	Preparation of DPR under process. Pre-project activities are going on.	Final Draft of DPR submitted and work in progress.	

Chapter – V
FINANCIAL REVIEW / OUTLAY

Financial review/requirement of the Programme/Schemes under Secretariat of the MOC, DOT (HQ), C-DOT, TEC, WPC, WMO, VTMs, USO, Contribution to International Telecommunications Union, Asia Pacific Telecommunity, TRAI and Telecom. Dispute Settlement and Appellate Tribunal etc. for the financial years 2012-13, 2013-14 and 2014-15.

(₹ in crore)

	BE 2012-13			RE 2012-13			Actuals 2012-13		
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
Budgetary Provision									
MH 3451-Secretariat Economic Services:									
(a) Secretariat (MOC)	0.00	7.06	7.06	0.00	6.53	6.53	0.00	3.72	3.72
(b) Directorate General Administration	0.00	316.21	316.21	0.00	298.29	298.29	0.00	297.13	297.13
(c) Administrator USO Fund	0.00	4.32	4.32	0.00	3.91	3.91	0.00	24.50	24.50
(d) C-DOT	214.10	0.00	214.10	133.84	0.00	133.84	150.00	0.00	0.00
(e) TEC	0.00	13.68	13.68	0.00	13.94	13.94	0.00	0.00	150.00
(f) TERM Cells	0.00	42.11	42.11	0.00	26.62	26.62	0.00	13.45	13.45
(g) Telecom Testing & Security Certification Centre	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
(f) Tribal Area Sub-Plan (TSP)	0.90	0.00	0.90	1.16	0.00	1.16	0.00	0.00	0.00
Total -MH 3451	**216.00**	**383.38**	**599.38**	**135.00**	**349.29**	**484.29**	**150.00**	**338.80**	**488.80**
MH 2071 – Pension									
Pension	0.00	4806.00	4806.00	0.00	5100.00	5100.00	0.00	5688.99	5688.99
MH 3275 –Other Communications Services:									
(a) Wireless Planning and Co-ordination	6.50	5.39	11.89	1.20	7.51	8.71	0.03	8.27	8.30
(b) Wireless Monitoring Services	1.65	25.77	27.42	0.50	22.76	23.26	0.34	21.34	21.68
(c) International Co-operation (ITU,APT, CTO)	0.00	22.01	22.01	0.00	20.81	20.81	0.00	18.87	18.87
(d) Transfer to Telecom Authority of India General Fund	20.00	35.00	55.00	20.00	41.00	61.00	20.00	41.00	61.00
(e) Telecom Dispute Settlement and Appellate Tribunal	1.50	10.49	11.99	1.50	10.41	11.91	0.65	10.09	10.74
(f) Financial reliefs to ITI Limited	0.00	0.00	0.00	0.00	130.00	130.00	0.00	137.08	137.08
(g) Compensation to I.T.I	0.00	6.00	6.00	0.00	7.10	7.10	0.00	0.00	0.00
(h) Transfer to USO Fund	3000.00	0.00	3000.00	625.00	0.00	625.00	625.00	0.00	625.00
(i) USOF-Compensation to Service Providers	2689.10	0.00	2689.10	548.22	0.00	548.22	625.00	0.00	625.00
(j) Technology Development & Investment Promotion	1.50	0.00	1.50	1.50	0.00	1.50	0.38	0.00	0.38
(k) Human Resource Management for IP&TAF Service.	10.99	0.00	10.99	6.00	0.00	6.00	4.16	0.00	4.15
(l) Tribal Area Sub-Plan (TSP)	11.10	0.00	11.10	4.83	0.00	4.83	0.00	0.00	0.00
Total - MH 3275	5742.34	104.66	5847.00	1208.75	239.59	1448.34	1275.55	236.65	1512.20
MH 2552 -Provision for North East Region	335.00	0.00	335.00	86.95	0.00	86.95	0.00	00	0.00
Total - Revenue Section	**6293.34**	**5294.04**	**11587.38**	**1430.70**	**5688.88**	**7119.58**	**1425.55**	**6264.44**	**7690.00**

(Rs in crore)

	BE 2012-13			RE 2012-13			Actual 2012-13		
	Plan	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**
Capital Section:									
MH 5275 - Capital Outlay on Other Communication Services									
(a) TEC	13.50	0.00	13.50	1.80	0.00	1.80	1.75	0.00	1.75
(b) WPC	0.50	0.00	0.50	0.30	0.00	0.30	0.01	0.00	0.01
(c) WMO	50.35	0.00	50.35	2.65	0.00	2.65	2.36	0.00	2.36
(d) OFC Net work for Defence Services	1218.30	0.00	1218.30	1366.20	0.00	1366.20	1517.18	0.00	0.00
(e) Physical Infrastructure for NICF	19.00	0.00	19.00	4.00	0.00	4.00	2.13	0.00	0.00
Total - MH - 5275	**1301.65**	**0.00**	**1301.65**	**1374.95**	**0.00**	**1374.95**	**1523.43**	0.00	**0.00**
MH-4859-Investments in Bharat Broadband Network Limited (BBNL) *	60.00	0.00	60.00	60.00	0.00	60.00	59.95	0.00	0.00
MH- 6859 - Loans to I.T.I Ltd	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
MH 4552 -Provision for North East Region	145.00	0.00	145.00	152.35	0.00	152.35	0.00	0.00	0.00
Total - Capital Section	**1506.66**	**0.00**	**1506.66**	**1587.30**	**0.00**	**1587.30**	**1583..38**	0.00	0.00
								0.00	0.00
Total Telecommunications Services	**7800.00**	**5294.04**	**13094.04**	**3018.00**	**5688.88**	**8706.88**	**3008.93**	**0.00**	**3008.93**

B.E. 2013-14 & R.E. 2013-14 and B.E. 2014-15

(` in crore)

	BE 2013-14			RE 2013-14			BE 2014-15		
	Plan	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**
Budgetary Provision									
MH 3451-Secretariat Economic Services:									
(a) Secretariat (MOC)	0.00	7.00	7.00	0.00	5.73	5.73	0.00	6.49	6.49
(b) Directorate General Administration	0.00	189.00	189.00	0.00	176.17	176.17	0.00	115.45	115.45
(c) Administrator USO Fund	0.00	4.05	4.05	0.00	3.82	3.82	0.00	4.57	4.57
(d) C-DOT	222.90	0.00	222.90	222.90	0.00	222.90	172.75	0	172.75
(e) TEC	0.00	54.30	54.30	0.00	40.71	40.71	0.00	28.55	28.55
(f) TERM Cells	0.00	29.04	29.04	0.00	50.44	50.44	0.00	50.90	50.90
(g) Telecom Testing & Security Certification Centre	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(f) Tribal Area Sub-Plan (TSP)	1.10	0.00	1.10	1.10	0.00	1.10	2.25	0.00	2.25
(g) Controller of Communication Accounts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.19	96.19
Total -MH 3451	**224.00**	**283.39**	**507.39**	**224.00**	**276.87**	**500.87**	**175.00**	**302.15**	**477.15**
MH 2071 – Pension	0.00	5508.00	5508.00	0.00	5950.00	5950.00	0.00	6386.00	6386.00
Pension									
MH 3275 –Other Communications Services:									
(a) Wireless Planning and Co-ordination	1.30	7.98	9.28	2.70	7.72	10.42	1.90	8.53	10.43
(b) Wireless Monitoring Services	1.22	26.00	27.22	0.90	23.94	24.84	1.55	31.09	32.64
(c) International Co-operation (ITU,APT, CTO)	0.00	24.26	24.26	0.00	24.26	24.26	0.00	27.24	27.24
(d) Transfer to Telecom Authority of India General Fund	22.00	35.00	57.00	22.00	41.00	63.00	40.00	58.00	98.00
(e) Telecom Dispute Settlement and Appellate Tribunal	1.50	11.51	13.01	1.28	11.81	13.09	1.55	13.05	14.60
(f) Financial reliefs to ITI Limited	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(g) Compensation to I.T.I	0.00	7.00	7.00	0.00	5.50	5.50	0.00	6.00	6.00
(h) Transfer to USO Fund	3000.00	0.00	3000.00	3000.00	0.00	3000.00	3537.00	0.00	3537.00
(i) USOF-Compensation to Service Providers	2683.80	0.00	2683.80	2683.80	0.00	2683.80	3159.00	0.00	3159.00
(j) Technology Development & Investment Promotion	1.50	0.00	1.50	0.60		0.60	1.00	0.00	1.00
(k) Human Resource Management for IP&TAF Service.	12.00	0.00	12.00	10.45	0.00	10.45	15.00	0.00	15.00
(l) Tribal Area Sub-Plan	13.40	0.00	13.40	13.30	0.00	13.30	0.00	0.00	0.00
(J)Refund of Upfront charges of BWA Spectrum in respect of BSNL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00
Total - MH 3275	**5736.72**	**111.75**	**5848.47**	**5735.03**	**114.23**	**5849.26**	**6757.00**	**243.91**	**7000.91**
MH 2552 -Provision for North East Region	329.00	0.00	329.00	329.00	0.00	329.00	403.00	0.00	403.00
Total - Revenue Section	**6289.72**	**5903.14**	**12192.86**	**6288.03**	**6341.10**	**12629.13**	**7335.00**	**6932.06**	**14267.06**

(Rs in crore)

	BE 2013-14			RE 2013-14			BE 2014-15		
	Plan	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**	**Plan**	**Non-Plan**	**Total**
Capital Section:									
MH 5275 - Capital Outlay on Other Communication Services									
(a) TEC	11.00	0.00	11.00	2.23	0.00	2.23	13.00	0.00	13.00
(b) WPC	0.20	0.00	0.20	0.20	0.00	0.20	0.50	0.00	0.50
(c) WMO	43.58	0.00	43.58	5.40	0.00	5.40	42.45	0.00	42.45
(d) OFC Net work for Defence Services	2180.50	0.00	2180.50	314.10	0.00	314.10	2760.00	0.00	2760.00
(e) Physical Infrastructure for NICF	23.99	0.00	23.99	3.00	0.00	3.00	68.05	0.00	68.05
(f) Investment in Hemisphere Properties India Ltd (HPIL)	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.00	0.00
(g) Microwave Link between Champai and Zokhawthar	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00
Under ea Cabling between main land and Andaman Nicobar	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Establishment of Satellite Gateway Assistance to BSNL	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00
North East project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total - MH - 5275	**2259.27**	**0.00**	**2259.27**	**324.96**	**0.00**	**324.96**	**2892.00**	**0.00**	**2892.00**
MH-4859-Investments in Bharat Broadband Network Limited (BBNL) 4859 I T I Revival (Equity Investment)	0.00	0.00	0.00	0.00	0.00	0.00	460.00	0.00	460.00
MH- 6859 - Loans to I.T.I Ltd	0.01	0.00	0.01	0.01	0.00	0.01	1.00	96.00	97.00
MH- 6859- Loans to TCIL	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
M H 7272 Loans to Hemisphere Properties India Ltd (HPIL)	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
MH 4552 -Provision for North East Region	251.00	0.00	251.00	36.00	0.00	36.00	347.00	0.00	347.00
Total - Capital Section	**2510.28**	**0.00**	**2510.28**	**361.97**	**0.00**	**361.97**	**3702.00**	**96.00**	**3798.00**
Total Telecommunications Services	**8800.00**	**5903.14**	**14703.14**	**6650.00**	**6341.10**	**12991.10**	**11037.00**	**7028.06**	**18065.06**

* 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

1. Telecom Regulatory Authority of India (TRAI)

The Institutional Capacity Building Project (ICBP) comprises of Consultancy Studies and International Training for officers and staff of TRAI. This project 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.

REVIEW OF PERFORMANCE

During the year 2012-13 following Consultancy Studies /Seminars / Studies /surveys etc. were undertaken under ICBP:

S.No.	Study / Consultancies/workshop/Seminars
1.	Engagement of firm/agency to review the Reporting System on Accounting Separation Regulation, 2004
2.	Study tour regarding the implementation for making telecom networks more resilient to Disasters/Emergencies
3.	Consultancy for study of cross media ownership and vertical integration in broadcasting and other media sector
4.	Appointment of independent agencies for (i) Implementation and Effectiveness of Telecom Consumers Protection and Redressal of Grievances Regulations, 2007 and (ii) Customer Perception of Service through Survey and Audit and Assessment of Quality of Service
5.	Workshop on "Issues involved in implementation of Emergency Communication System"
6.	Seminar on Technical implementation of Priority routing of calls of persons engaged in 'response and recovery'
7.	Regional Offices of TRAI – Customers Outreach programmes etc.
8.	Consultancy services on "Migration to Next Generation Networks"
9.	Development of MIS application software for online data collection and report generation
10.	Engagement of agency to analyze the call Data Records (CDRs) to calculate service provider wise liability of transit carriage charge
11.	Engagement of Consultant for study of Beta of Telecom Service and Market Rate of Return
12.	Study on Taxes and Leevies on Indian Telecom Sector
13.	Visit cum Study tour/International Trainings/Workshops/Seminars etc. as per the details at Annexure-B

As per the agreement the scope of the consultancy work includes the following:

(i) Preparation of an Exhaustive Report on NGN
(ii) Preparation of a Consultation Paper on NGN
(iii) Conducting Workshop on NGN for Industry
(iv) Assist Telecom Regulatory Authority of India in post evaluation work

Consultant had submitted 1st draft of the exhaustive report on NGN on 28.9.2011. Subsequently, the exhaustive report underwent two revisions, based on the comments provided by Telecom Regulatory Authority of India. Further, consultant had submitted 4th draft exhaustive report on 27.04.2012 after incorporating the addition/changes suggested by Telecom Regulatory Authority of India.

Consultant had also submitted 1st draft of the Consultation Paper on NGN on 14.10.2011. Subsequently, the Consultation Paper underwent three revisions, based on the comments provided by Telecom Regulatory Authority of India.

Workshop on NGN was conducted by the consultant from 29.11.2012 to 30.11.2012 at New Delhi

Development of MIS application software for online data collection and report generation

The purchase order was issued in April 2012. Phase-I of the project has been completed and project is live from 01.1.2014. Training for SPs as well as TRAI's officers has been imparted.

Intranet in TRAI: Intranet has been made functional and feedback from divisions is awaited for its further improvement.

Visit cum Study tour/ International Trainings/Workshops/Seminars etc. as per the details at Annexure-C

The second project 'Purchase of Land and Building for TRAI' is aimed at obtaining own office premises. The Status report for the period (April-December 2013) is as under:

Secretary, TRAI has written a DO letter dated 23rd August 2013 to CMD, M/s NBCC, New Delhi for getting allocation of about 100 Thousand square feet of covered area. So far, no response from M/s NBCC has been received. Since, the land has still not been allotted to TRAI, no physical performance regarding Land & Building project of TRAI has been taken

The details of performance for the year 2012-13 and 2013-14 are placed at **Annexure - "S"**.

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.

Actual Financial performance for the year 2013-14

(₹ in crore)

Sl. No.	Programme	RE 2013-14	Progress up to March 2014
1	Upgradation of TDSAT reference Library	0.08	0.0207
2	Study tour for familiarization of the Telecom regulatory environment/Training	0.90	0.2388
3	Holding of Seminar on Telecom Disputes Settlement	0.30	0.1423
	Total	**1.28**	**0.4018**

The review of the performance for the year 2012-2013 and for the year 2013-14 is placed at **Annexure – "T"**.

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.

The year 2011-12 for C-DOT was very eventful involving technologies' trial, business networking, demos, presentations, and participation in various forums for taking C-DOT technologies to the forefront in National Program on Security, Broadband connectivity for gram panchayat, National Knowledge Network etc. Efforts were also made in consolidating our technology position and signing various project agreements, participation in tenders / EOIs (Expression of Interest). Besides, vigorous efforts were also made in achieving the financial targets including internal revenue generation, clearing outstanding dues as well as undertaking initiatives in bringing transparency in the system and processes.

Following are the major achievements/progress during 2012-13

Communication and Security Research and Monitoring:

- Activities progressed under this project include enhancements and SW customization as part of R&D activities, as well as progressive roll-out in the field. The development activities completed during the year focused on CMS SW customization, which includes development of LEMF (Law Enforcement Monitoring Function), SW solution for LEAs (Law Enforcement Agency), support for LEMF, MNPO (Mobile Number Portability

Operator) in the RMC (Regional Monitoring Centre) SW, and CMC (Central Monitoring Centre). Besides, ISF (Interception Store-and-Forward) SW was also enhanced complying with new indigenously developed HW for this purpose. Development of SNMP agent for the EMS (Element Management System) for this interface HW has been completed. Network Management System (NMS) for CMS has been implemented. Development activity has been completed for providing support for multiple codec for 3G as well as customization for LIS (Lawful Interception System) in the ISF SW. Load testing of ISF and RMC has been completed. RMC-DR (RMC Disaster Recovery) design has also been finalized.

- The progress in the CMS roll-out for field deployment include completion of MNPO integration with CMS SW and upgradation of existing pilot CMC data centre with equipment, catering to the load of 8 LSAs. Data centre build work has been awarded and activities completed about 60%. Roll-out activity completed in the 7 LSAs (Licensed Service Area), namely, Delhi, Haryana, Kolkata, Karnataka, Mumbai, Rajasthan and Tamilnadu, with installation of ISF server at the TSP premises of the respective LSA and integration of these ISFs with the corresponding pilot RMCs (Regional Monitoring Centre) designated for the LSAs.

- By the end of FY2012-2013, it is planned to develop multiple codec support for 3G, LIS customization for 6 circles, and the installation activities in the 7 LSAs and 7 ILDs as part of CMS roll-out in the LSAs.

Rural Technologies:

- This scheme envisages various deliverables with rural focus, to facilitate improving rural tele-density and also to provide broadband connectivity for bridging the digital divide between the Urban and Rural India.

- During this financial year, SG-RAN system has been deployed in the field as pilot deployment in the BSNL network at Sakalwara, Bangalore and Hosur, Tamilnadu. GPRS functionality has also been implemented over SG-RAN under EAIS (Enhanced Active Infrastructure Sharing) development program, and GPRS testing has also been completed. Subsequently, the SG-RAN system installed in the field will also be upgraded with GPRS functionality for field testing.

Broadband Technologies

- The broadband technology aims at development of broadband CPE (Customer Premises Equipment) with 3G wireless fallback and terabit router (commercial-grade multi-terabit routing system) and routing platform for the NKN (National Knowledge Network)), required for building a high capacity network addressing the application needs of networks of defence, security, NKN, etc.

- The routing platform with 300 Gbps throughput (full duplex) for NKN is ready. Additionally, multiple prototypes of these routing platforms are also being fabricated for various trials. Further, development of commercial-grade multi-terabit routing system has also progressed significantly with completion of its architecture and engineering design and design implementation activities on-going. Development also completed for 3G-HSDPA (High Speed Downlink Packet Access) Modem, which has been interfaced to broadband ADSL (Asymmetric Digital Subscriber Line) Modem over USB connector to set up internet access through this 3G-HSDPA Modem. ADSL fallback to 3G has been field tried.

Next Generation Mobile Technologies

- The development in the mobile technology is progressing at an exciting pace. In the coming years, mobile networks may well support services beyond those that are available on today's multi-megabit fixed connections

- The R&D thrust during the year will be on design and development of LTE (Long-Term Evolution) technology with focus on Femto eNodeB access node and all the elements of core networks – EPC (Evolved packet Core). The Femto eNodeB hardware development activity has progressed significantly with lab-realization of its prototype hardware. Besides, EPC architecture also finalized and EPC nodes, namely, Mobility Management Entity (MME), Serving Gateway (SGW), Packet Data Network Gateway (PGW), Home subscriber Server (HSS), Policy and Charging Rules Function (PCRF), are under implementation. Further, audio call, video call and video streaming have also been demonstrated on the Femto eNodeB prototype using some of the developed EPC functionalities.

Carrier Networks' Transport Technologies

- The carrier network transport technology 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, access networks to evolve with upcoming technology trends.

- Development completed for IEEE1588-compliant CPEs (Customer Premises Equipment), i.e., Optical Network Termination - type-9 (ONT9) for network backhaul and cost-effective Optical Line Termination (OLT), i.e., Bhawan Damini, with optical interfaces. Bhawan Damini has been field tried in the NOFN trial block. ONT9 (IEEE1588 compliant CPE) is ready for field trial. Further, services over 10G GPON have also been demonstrated. Besides, development has also progressed well for C-DOT Line Card for Tejas (COLT), required for proprietary chassis.

Telecom Services and Applications

The development programs focus on SW intensive services and applications catering to changing technology trends towards convergence of applications, networks, contents

and value-added services creating differentiation. The progress in SW application development includes:

- Unified Network Management System (UNMS) base release supporting configuration, accounting, provisioning, number and fault management systems,
- NMS for NOFN (National Optical Fibre Network) prototype design completion and Proof-of-Concept (PoC) demonstration. 3 NOFN trial blocks under NMS monitoring,
- Telecom Asset Management System (TAMS) integration with UNMS
- NMS application development and piloting for management of broadband wireless network based on C-DOT BBWT, IP-based Managed Lease Line Network (IP-MLLN) for BSNL, etc.
- Enhancements of the platform, namely, Customised Service Management Platform (CSMP) with functionalities like XML (Extensible Markup Language) and APIs (Application Program Interface) for NGN (Next Generation Networks).

Besides, system architecture has also been finalised for Customised Platform for Rural Services (CPRS) that support a host of features and functions, like, gesture and speech recognition, near-field communication, etc, for providing application oriented services like Aadhaar authentication, e-agriculture, e-doctor consultation, etc. During the year, speech recognition and Aadhaar authentication features have been implemented. Client hardware development has been completed and tested.

Power Efficient and Green Telecom Technologies

A high efficiency RF amplification technology to improve the efficiency of legacy power amplifier used in existing and future BTSs (such as in LTE) especially in the remote/ rural areas, has been envisaged for development. The specification formulation and architecture has been finalised. Design implementation for HW realisation has been completed.

Secure wireless and wire-line networks

A secure mobile communication network is intended to be set-up using standard wireless technologies such as 3G, WiFi to provide accessibility to the authenticated users of closed user group, maintain the confidentiality of communicating users' identity, transport of classified and non-interceptive voice communication upgradable in future for video, data communication, etc. Major activities completed during this year are:

- WiPS application development with custom encryption and voice codec,
- Customization of off-the-shelve smart phones for WiPS application,
- Core network elements upgradation for secure mobile services, and
- Demonstration of the network with commercially available handsets.

Enhancements, New Features, Up gradations, Adaptations, Technical Support for developed Technologies including north-east program

The existing developed / deployed technologies in the network are being constantly enhanced through value additions, technology upgradations, bug-fixes, alternative solutions against component obsolescence etc. Besides, field / pilot trials are also being carried-out at multiple locations to fulfill the requirements of technology applications for different networks. Some of the technologies requiring regular support for upgradation / field support include GPON, MAX, ATM, SG-RAN, MAX-NG / IMS-compliant MAX-NG, BBWT, SDCN, and NMS etc. Accomplishments as follows:

- SG-RAN system installed in BSNL network (at Sakalwara, Bangalore), Tata Teleservices network and in Reliance network (at Hosur, Tamilnadu) as pilot deployment in the field for trial with live traffic.
- C-DOT solution for voice provisioning over FTTH services is operational in 200 cities. Expansion to other cities is going on.
- Validation and testing of MAX-NG has been completed. These systems are operational in the field at 4 sites in the BSNL network and have proved to be field worthy. MOU has also been signed with M/s BSNL for MAX-NG technology roll-out in the field and activities are going on for mass migration of C-DOT fixed-line technology to the next generation packet technology.
- IMS compliant NGN core and media gateway have been installed and commissioned in MTNL – Delhi & Mumbai. Further, C-DOT TDM based IN platform has also been migrated on NGN based IN platform in MTNL – Delhi & Mumbai.
- GPON technology has been upgraded with 1 new type of OLT and 3 new types of ONTs and system has been installed in the NOFN trial blocks. NMS PoC also completed for NOFN and 3 NOFN trial blocks are presently under NMS monitoring.
- Regular on-site and off-site technology support is being provided.

Enabling technologies and telecom network

During year studies have been carried-out in some of the technology areas such as optical backbone network for trends in DWDM (Dense Wavelength Division Multiplexing) – up to 40/100 Gbps line rates, 100+ channels; in-built grooming and multiplexing capability, re-configurable optical add /drop multiplexers; optical cross-connects etc. Besides, other study includes natural language processing for analysis on text (speech transcripts, HTML pages from GPRS, SMS) data, which include spoken word spotting – detecting / searching particular words in audio files, free text search – semantic search, stem search, search with misspellings etc.

Campus infrastructure

The statutory approval is in-process for the drawings in respect of hostel and dwelling units' construction, submitted by the architect to MCD (Municipal Corporation of Delhi) before the construction commences. Clearance for layout plan has been obtained from MCD and building plan is under submission to MCD.

Business Promotion

During the period significant efforts made in the promotion of C-DOT technologies, which include PoC (Proof-of-Concept), exhibiting /demo technologies in various exhibitions /seminar e.g. DEFEXPO- 2012, Defense and Aerospace SES 2012 (Strategic Electronics Summit), International Convention on Modern Train Control for Capacity and Safety Enhancement, Manufacturers/ Vendors Meet, IETE ATC 2012 Seminar and Expo etc.

C-DOT also celebrated commemoration of 25 years of first C-DOT RAX at Kittur, Karnataka, on 7th August, 2012 and its upgradation to MAX-NG for NGN. The function was held simultaneously at C-DOT centres in Delhi and Bangalore, and Kittur, and was linked by videoconferencing. Hon'ble MoC Shri Kapil Sibal addressed the gathering via mobile telecommunication.

These efforts resulted into following major accomplishments during the period.

- C-DOT GPON technology piloting in NOFN (National Optical Fibre Network) - in-principal approved with award of purchase order by M/s BSNL, Railtel, PGCIL for the same. M/s Bharat Broadband Network Limited (BBNL) allocated 3-sites, namely, Parwada (Vishakhapattanam), Panisagar (North Tripura) and Arain (Ajmer), total covering about 59 grampanchayats for trial of GPON technology in the National Optical Fibre Network (NOFN) and system has been installed at field sites;

- GPON field trial under active consideration in the Indian defense sector , that is, Indian Army for its CNDS (Communication Secure Network for Defense Sector) network as well at Sena Bhawan, Indian Airforce in its AFNET (Airforce network) at Vayu Bhawan;

- The e-panchayat project with e-panchayat network comprising of 20 schools in Ajmer district, Rajasthan, is being implemented using C-DOT BBWT technology (Broadband Wireless Terminal) C-DOT. The BBWT system and associated hardware along with computers, printers, installed in the designated e-panchayat network and the trial has been completed;

- C-DOT BBWT technology was also presented followed by a detailed technology field trial at IGNOU and C-DOT campus to emulate a real case scenario, for distribution of educational content for NME-ICT (National Mission on Education through Information and Communication Technology) project (for country-wise adaptation). The technology under active consideration of NME-ICT for deployment;

- C-DOT received purchase orders for its BBWT systems from WESEE (Weapons and Systems Engineering Establishment), an R&D organization of IHQ MoD, Govt. of India, Delhi for wireless Wi-Fi connectivity for Navy's use;

- C-DOT DRAX application installed at Ramanagara district Zilla Parishad and Shimoga district Zilla Parishads in Karnataka for field trial and capability demonstration to KSCST (Karnataka State Council for Science & Technology). DRAX application has received STQC (Standardization Testing & Quality Certification) certificate for application usability.

MoUs /NDAs/ToT Agreements Signed

- The agreements signed for technology commercialisation, technology trials, know-how/ knowledge sharing during the period includes:

- MoU signed with BSNL for migration of C-DOT's fixed-line technology (MAX switches) to the packet-based NGN using MAX-NG systems.

- MoU signed with BBNL for various activities, that include design, development, deployment and setting up of Network Operation Centre (NOC) for the management of NOFN, technology planning tool and services, trials and deployment of BBWT, security of networks, etc.

- Addendum to GPON ToT (Transfer of Technology) agreements signed with existing ToT partners – BEL, HFCL, ITI Limited, UTL and VMC Technologies, for transfer of technology for C-DOT Bhawan Damini for buildings and residential sector.

- ToT agreement signed with ITI Limited for Managed Lease Line Network (IP-MLLN) technology.

- MoU signed with MTNL for execution and field trials of C-DOT technologies in MTNL network. BBWT and IMS-compliant NGN-based solution deployed for trials.

- MoU signed with BSNL for technology support of C-DOT's fixed-line technology (MAX switches) in the field.

- Umbrella MoU signed with BEL for joint operation in communication R&D, manufacturing, etc.

- MOU signed with USOFA for providing technical consultancy on provisioning of mobile communication services in uncovered villages.

- A total of 27 NDAs (Non Disclosure Agreement) signed with strategic partners for contractual relationships with respect to various technologies.

IPRs, Papers presented / Publications etc

Intellectual Property Asset	Nos.	Subject Invention	
Patents filed	2	Detecting fibre cut (under GPON project)	System and method for detecting cuts in working fibre and switching to another fibre.
		GSM-EDGE modulators (under SG-RAN project)	GSM-EDGE modulators for 2.5G system, an efficient parallel implementation on FPGA.
Papers presented in the national / international conferences / seminars	5	Crest Factor Reduction for Carrier Aggregated OFDM (Orthogonal Frequency Division Multiplexing) Systems – SoftCom2012, 20th International Conference on Software, Telecommunications and Computer Networks.	
		Performance improvement in PAPR (Peak-to-Average Power Ratio) reduction with combined Partial Transmit Sequence and Noise shaping Algorithm – at Radio 2012, The Radio and Antenna Days of the Indian Ocean, Mauritius	
		Some Experimental Investigations in the WiMAX Band and Comparison of Propagation Models in Mixed Urban Environments of Western India - Springer, Annals of telecommunications, 2012, DOI: 10.1007/s12243-012-0298-7	
		Experimental Investigation of GSM 900 MHz Results Over Northern India with Awas Electromagnetic Code and Other Prediction Models - Progress In Electromagnetic Research, Vol. 125, 559-581, 2012. doi:10.2528/PIER11123003	
		Tuning of COST-231 Hata Model for Radio Wave Propagation Predictions - Second International Conference in Computer Science, Engineering and Applications, CCSEA-2012, 26-27 May'2012, New Delhi	

Process improvement

Process implementation state at CMMI ML3 (Maturity Level 3), certified in FY2011-2012, has been sustained through facilitation and internal QA audits. During this year, collection and analysis of metrics data and study of High Maturity (levels 4 and 5) and trainings thereon, have been completed, as preparations for design and implementation of CMMI level 4 and 5 processes, project performance baselines and models, and subsequent appraisal for CMMI ML5 certification.

Annexure –S

TELECOM REGULATORY AUTHORITY OF INDIA
Performance for the year 2012-13

(Rs in Crore)

Sl. No.	Name of the Scheme / Programme	Objective / Outcome	Outlay 2012-13			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	Complementary Extra-Budgetary Resources				
1.	Institutional Capacity Building Project	To strengthen the Institutional capabilities of TRAI to perform its functions under the TRAI Act, 1997 including carrying out of Consultative studies on Regulatory Issues and provision of training	--	20.00 crores	--	(a) Consultative Studies / Workshop on Regulatory issues.	The proposed studies will help TRAI in formulating its Recommendations and in other Regulatory functions	To be completed during 2012-13	
						(b) Provision of training of TRAI official on technical and Regulatory issues	To meet the training needs of TRAI officials		
2.	Purchase of Land and Building (Capital) for TRAI Office	To obtain own office premises		60.00 crores	--				Funds available under 'TRAI General Fund' (a non-lapsable fund) are proposed to be utilized as and when the proposal materializes

TELECOM REGULATORY AUTHORITY OF INDIA
Performance for the year 2013-14

(**Rs** in Crore)

Sl. No.	Name of the Scheme / Programme	Objective / Outcome	Outlay 2013-14			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
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	--	25.00 Crores	--	(a) Consultative Studies / Workshop on Regulatory issues. The list of proposed consultancies / Studies proposed to be taken is enclosed at Appendix	The proposed studies will help TRAI in formulating its Recommendations and in other Regulatory functions	To be completed during 2013-14	
						(b) Provision of training of TRAI official on technical and Regulatory issues	To meet the training needs of TRAI officials		
2.	Purchase of Land and Building	To obtain own office premises		500.00 crores	--				Funds available under

	(Capital) for TRAI Office								'TRAI General Fund' (a non-lapsable fund) are proposed to be utilized as and when the proposal materializes

Annexure –T

TELECOM DISPUTES SETTLEMENT & APPELLATE TRIBUNAL
Performance for the year 2012-13

(Rs in Crore)

Sl. No.	Name of Scheme/ Programme	Objective/Outcome	Outlay 2012-13 Plan Budget (R.E.)	Quantifiable Deliverables/ Physical Outputs	Processes/ Timelines	Achievements w.r.t Col (5) as on 31-03-2013	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.	0.10	Purchase of books and other related materials to strengthen the Library.	Ongoing activity	Books and hardware/software purchased	
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.	0.95	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 tours of Senior officers of TDSAT to Miami, USA, Dubai, South Africa and Barcelona, Spain 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	0.45	Holding of domestic seminars on Telecom Disputes & Settlement in four cities in the country	Ongoing activity	Seminar held at Srinagar and Patna have helped in generating awareness amongst stake holders about dispute settlement in telecom and broadcasting sector	
		TOTAL =	**1.50**				

Contd…Annexure –T

TELECOM DISPUTES SETTLEMENT & APPELLATE TRIBUNAL
Performance for the year 2013-14

(Rs in Crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2013-14 (R.E.)	Quantifiable Deliverables/ Physical Outputs	Processes/ Timelines	Achievements w.r.t Col (5) as on 31-03-2014	Remarks/ Risk Factors
1	2	3	4	5	6	7	8
1	Upgradation of TDSAT Reference Library	Purchase of books to strengthen the Library.	0.08	Purchase of books to strengthen the reference library	Ongoing activity	Purchase of books and hardware/Software for upgradation of reference library	
2	Study tours for familiarizing with the telecom regulatory environment/ Training	Study tour by Hon'ble Chairperson and Members to various countries and training officer of TDSAT on various subject on telecom regulation including dispute settlement.	0.90	Study tour by Hon'ble Chairperson and Members to various countries and training officer of TDSAT on various subject on telecom regulation including dispute settlement.	Ongoing activity-	The Study tour of Senior officers of TDSAT to Geneva, Switzerland, Warsaw, Poland and Barcelona Spain 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	Ongoing activity	Seminar held at Delhi, Jaipur and Shimla have helped in generating awareness amongst stake holders about dispute settlement in telecom and broadcasting sector	
		TOTAL	**1.28**				

Annexure – U

CENTRE FOR DEVELOPMENT OF TELEMATICS
Performance for the year 2013-14

(Rs in Crore)

Sl. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2013-14 (Rs.in Crores)			Quantifiable Deliverable	Process / Timeline		Achievement upto march' 2013)
			Non-Plan Budget	Plan Budget (RE)	Complimentary Extra Budgetory Resources				
1	2	3	4(i)	4(ii)	4(iii)	5	6	7	8
1	Communication & Security Research and Monitoring	The Communication and Security research and monitoring scheme aims to build, through indigenous Research & Development, a national infrastructure comprising a Central Monitoring System with secure connectivity and automated provisioning, to all TSPs and ISPs to strengthen the functions of the Law Enforcement, Agencies (LEA) of the country.		96.76					

1a	R&D for security management for law enforcement agencies: Centralized Monitoring System (CMS)	The R&D component of the scheme primarily focuses on design, development and trials / validation of systems related to call interception, monitoring, analysis of social networking of target subscribers' data, end-to-end secured work flow etc. as required by various law enforcement central and state agencies to address unlawful activities through misuse of country's voice-&-data communication network by anti-social elements.		6.78		Centralized Monitoring System (CMS)	Q1 to Q4	•LEMF Alarm Viewer, Helpdesk phase-1. •CMS-IM release for GSM data collection enhancements in LEMF. • CMS-NMS V3.0.0 release development • CMS-IM release for GSM data collection from TSPs across RMCs. • CMC disaster recovery.	•Completed

1b	Progressively scaled up infrastrucutre creation for CMS national roll out	Progressive scaling up and build-up of the facilities in an environment of multi-technology, multi vendor and multi-service providers to the requirements of LEAs. This is a national level project to build an infrastructure to centrally monitor, for lawful interception, the entire country's TSP, ISP and satellite networks. Entire work-flow, from provisioning the target to interception, will be end-to-end automated on a secure platform.		89.98		To build-up infrastructure for a National Roll-out of CMS	Q1 to Q4	• Data Centre build upto 70% capacity. • Installation & Integration RMCs in 16 LSAs & its correspondin g TSPs, 7 ILDs. • Main CMC infrastructur e installation upto 60% capacity. • Data Center built for DR site - upto 40% capacity. • Pilot CMC - DR at Delhi.	•Completed • ISF equipment installed in 8 LSAs – Delhi, Haryana, Karnatka, Kolkatta, Mumbai, Punjab, Rajsthan, Tamilnadu, Testing & acceptance by C-DOT ongoing for these 8 LSA's. • P.O released for the ISF equipment for the remaining 13 LSAs, • Pilot RMCs (single server with reduced capacity) for 8 LSAs are operational at C-DOT, since RMC integration onsite pending due to non readiness of RMCs Data centre.

2	Rural Technolo-gies:	This scheme envisages various deliverables with Rural focus, to facilitate improving Rural tele-density and also to provide Broadband connectivity for bridging the digital divide between the Urban & Rural India. In this scheme, it is plan to complete the technology development for enhancing the capability of shared active GSM infrastructure (BSS) with GPRS/E-GPRS functionalities.		5.46		• Enhanced active infrastructure sharing **(EAIS)**.	Q1 to Q4	• System build and internal validation for GPRS & E-GPRS (EDGE).• Spectrum sharing implementation.• Field trial commencement for GPRS , E-GPRS and spectrrum sharing.	• Completed
								• Hardware Upgradation to achieve 600 Gbps throughput. • Field trial commencement in NKN.	gbps throughput, field trial completed successfully at IIT Kanpur, NTRO Delhi.

4	Carrier networks' transport technology	In this Scheme, it is planned to put in R&D efforts in the technology for access, transport/backhaul and metro/aggregation networks to indigenously build systems and sub-systems and gain expertise.		34.77		**OAAS :** Bhawan Damini-3 (BD-3) system supporting 10G with optical interfaces.Optical Network Termination (ONT) supporting ring configuration at PON interface (ONT-R), Cost-effective 4-port Optical Line Termination (OLT), Design completion for 32G-PON OLT and ONT, HW design completion for XG-PON OLT PON. **OCN :** Demonstration of multiple 10G Ethernet traffic over single channel of 100G muxponder.	Q1 to Q4	•**OAAS**:Design, validation completion for ONTR (ONT-Ring), BD3, OLT Octal PON interface Card, COLT, OTDR Controller Card and commencement of pilot trial. **OCN :** • Design completion of controller card & 100G Muxponder card. • Demonstration of multiple 10G	**OAAS:** Completed and Pilot trial commenced **OCN:** •System specifications, architecture and design for controller card, 100G Muxponder card completed. •Readiness of lab set-up for demonstration.

								Ethernet traffic over single 100G channel muxponder.	
5	Telecom services & applications	This scheme aims to undertake development of software intensive services and applications.		6.53		• Development of Unified/converged Network Management system (UNMS),• Development of customized platform for rural services (CPRS).	Q1 to Q4	**UNMS:** UNMS rel. v1.0.0 for NFS network PoC, UNMS release with TAMS integrated, UNMS rel. V2.0.0 with integration of performance management mediation and wireless functionality support**CPRS**: System engineering. Implementation of other services and features,namely,Gesture recognition, Video conferencing, SMS alerts & farming	**UNMS:**Completed all the activities.**CPRS :** Services & feature like feedback collection form from user and e-notice board, SMS alerts & farming tips implemented. Client hardware system engineering completed, client prototype hardware ready and tested.

								tips., Testing & internal validation, Field trial & ToT commencement.	
6	Power effiecient & green technologies	It is planned to undertake programs to put in R&D efforts to explore alternative sources of energy, and do design optimisations to enhance system power efficiency in the existing developed and deployed technologies as well as new technology programs.		3.10		• Development of High Efficiency RF Amplifier (HERA)	Q1 to Q4	•System integration, testing & modifications, Commencement of internal validation and Pilot / Field trial	• System integration, testing & modifications completed, field trial is-in-progress

7	Secure wireless & wire-line networks	This scheme focuses on creating secure networks for intra and inter-department communications within various ministries of the Government of India. Information security is required both during data storage and retrieval. Communication security is required for all information transfer, including voice, video and data, and hence, security needs to be ensured for fixed-line, wireless as well as mobile communications.		1.69		• Launch of WiPS services with indegenously developed secure phone and tablet	Q1 to Q4	• Completion of Secure tablet and secure phone design, ,release of final version of secure phone and tablet • Completion of client & core-side software for WiPS, • Integration testing of WiPS services with SDCN & launch of WiPS services for end users (phase2 deliverable).	• Design completed for secure tablet and secure phone design pending due to support from chip vendors for the silicon. • Completed • Trial started for integrating core SDCN network with WiPS phone (beta version) and tablet.

8	Next generation mobile technology	In this scheme, the focus will focus onto develop Long Term Evolution of Universal Terrestrial Radio Access Network (LTE-A) access nodes, such as eNodeB, and all the elements of core networks required for LTE-A.		28.65		**LTE-A**• Design and development of Femto eNodeB base station and the corresponding Evolved Packet Core (EPC).• Development of core network platform for delivery of services to fixed and mobile subscribers	Q1 to Q4	**LTE-A**• Integration and testing of Femto System with EPC from other vendors.• Commercial eNodeB Femto system - demonstration of femto solution with voice, data and video services.• Implementation of NMS for LTE Femto networks,• Prototype of LTE Macro Base station, • LTE Femto pilot trial completion. **FMCP**• Field trials of Copper Access Node, • Integrated release of PCO Charging Services, Policy	**LTE-A**Completed CompletedCompletedCompleted Complted in FDD band.**FMCP**• Integrated release of soft switch and copper access node completed and under validation.• Completed

								Enforcement functions and mobiledata core network with IMS voice services.	

9	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.		3.90		• Projects related to feasibility study / Proof of concept and setting up pilots in new / green field areas in telecom enabling technologies and networks.	Q1 to Q4	• Technical consultancy to USOFA for provisioning of mobile infrastructure in rural areas. • Satellite hub feasibility study	• USOFA: Technical specifications & cost details provided to USOFA (Universal Service Obligation Fund Administration) as part of C-DOT technical consultancy to USOFA for provisioning of mobile infrastructure in rural areas. • Development for Satellite hub study carried out and finalized specifications and architecture for implementation.

10 (i)	Enhancements/ New Features/ Upgradation/ Adaptation/ Technical support for developed technologies	This scheme focuses on R&D efforts related to development /and technology support, required for enhancements, evolution, feature addition, scalability, value addition and customization for changing requirements. These are envisaged for developed / deployed technologies of C-DOT. Major activities under this scheme include enhancements of existing deployed technologies, namely, MAX, RAX, NMS (local, TAX, GSM), Call Interception System, IN, NGN / MAX-NG, GPON,SDCN,CSMP,SGRAN etc., for feature addition, component obsolescence, bug-fixing with new releases, etc.		66.21		Product/Design support	Q1 to Q4	Accomplishments as follows: •SGRAN : System trials completed at Sakalwara with BSNL, trials with 3 operators (Tata, Reliance, and BSNL) GPRS and EDGE integration in base system completed,ToT support provided to BEL for assembly of 5 large capacity systems. Initiated discussions for technology productionization. Small outdoor BTS also designed. •SDCN: The network has been set-up and in-trial operation in Delhi region. Field issues of SDCN VoIP phone also addressed.

10(ii)		The scheme also focusses on field implementations /& roll-outs of developed technologies, architecting and solution provisioning		22.27		Technology field implementation & rollouts	Q1 to Q4	Accomplishments as follows:•**MAX-NG roll-out in BSNL network:** MoU signed with BSNL for MAX-NG technology roll-outs in the country. Requisite process initiated to gear-up for mass migration of MAX to MAX-NG systems.•**BBWT in NOFN block:** A total of 164 BBWT systems installed in Parwada, Panisagar & Arain blocks of NOFN, trials completed for IISc, MSRIT, for campus applications, pilot trials of CORAL-3P system has been successfully completed in C-DOT campus.**NMS for NOFN:** Requirements, architecture design completed for NOFN (National Optical Fiber Networks) DCN NMS, NOFN network elements integration with NOFN GPON EMS successfully completed for IPv6 support, test bed tender floated & tech evaluation completed for NOC set up at Delhi and Bangalore.**NGN roll-out in MTNL network:** C-DOT NGN core operstional in the MTNL - Delhi & Bangalore, migration of soe IN services to NGN-IN services, voice over FTTH services commercially operatrional based on C-DOT NGN solution.

11	Campus Infrastruc-ture	Construction of residencial facilities for CDOT staff at Delhi R&D campus area, to further enhance environment for R&D.		0.50		• Residential facility	Q1 to Q4	Commencement of construction activity, subject to obtaining statutory approvals. •Statutory approval is in-process.
		Total		**310.00**				

Abbreviations:

CMS: Centralized monitoring system; NMS : Network management system ; LEMF: Law Enforcement Monitoring Function; CMS-IM : CMS Intelligence manager; RMC: Regional monitoring centre; ISF: Interception-stote-and-forward; CG-MTBR: Commercial grade multi terabit router; NKN: National knowledge network; GPRS: General Packet Radio Service; E-GPRS: Enhanced GPRS; IMS: IP Multimedia System; LTE: Long Term Evolution of universal terrestrial radio access network; OAAS: Optical aggreagation and access system; OCN: optical core network;OTDR : Optical time domain reflectometer; COLT :C-DOT line card for Tejas; OLT: Optical Line termination; ONT: Optical network termination; BD: bhawan damini; TAMS :Telecom Asset Management System; UNMS: Unified network management system ; CPRS: Customized platform for rural services; WiPS: Wireless phone secure; EPC: Evolved packet core; NOC: Network Operation Centre: NOFN: National Optical Fibre Network; GPON: Gigabit Passive Optical Network; FTTH: Fibre-to-the-Home; HERA: High Efficiency RF Amplifier;