

Annual Report 2011-12



Centre for Development of Telematics



C o n t e n t s

C-DOT Management

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C-DOT Management

Governing Council

Chairman

Minister of Communications & IT

Vice-Chairman

Minister of State for Communications & IT

Members

Scientific Advisor to the Defence Minister

Chairman, Telecom Commission & Secretary (T)

Member (Technology), Telecom Commission

Member (Finance), Telecom Commission

Secretary, Department of Electronics and Information Technology

Chairman & Managing Director, BSNL

Executive Director, C-DOT

Directors, C-DOT

Steering Committee

Chairman

Chairman, Telecom Commission & Secretary (T)

Vice-Chairman

Member (Technology), Telecom Commission

Members

Chairman & Managing Director, ITI Ltd.

Director (Planning), BSNL

Sr. DDG, Telecom Engineering Centre

DDG (TPF), Department of Telecommunications

Sr. Director, Department of Electronics and Information Technology

Executive Director, C-DOT

Directors, C-DOT

Project Board

Chairman

Executive Director, C-DOT

Members

Directors, C-DOT

Overview

C-DOT, India's premier telecommunications R&D centre, has been a pioneer and a nation builder. Committed to providing a wide range of indigenously developed cost-effective, state-of-the-art total telecom solutions, it has come a long way since its inception 27 years ago.

C-DOT's contribution to the rural telecommunications scene in the country is well known. In the eighties, C-DOT developed rural telecommunication products ideally suited to Indian conditions. Able to work without air conditioning, the C-DOT Rural Automatic Exchanges (RAXs) acquired legendary status for their ruggedness and reliability. More switching products like SBM RAX for semi-urban and MAX-L (and later MAX-XL) for urban use followed. 6RU10, a radio product for rural applications was also developed. All these products were based on contemporary digital technology.

Starting from the single mission of providing a dial tone, C-DOT has grown, over the last 27 years, to the level of a national centre for Research and Development in communication technology in many areas –Satellite communications, IN, ATM, DWDM, NMS, Wireless Broadband, GPON, NGN and Mobile Cellular systems. C-DOT's ATM technology has been mandated for use for onboard

communication in Indian Navy ships. The GPON is expected to play a lead role in bringing broadband pipes to rural India. The SG-RAN product, based on sharing of active GSM infrastructure, will bring affordable mobile telephony to the rural market. The MAX-NG will breathe fresh life into the fixed line infrastructure of the country by bringing new service features to POTS (Plain Old Telephony Service) along with VoIP and broadband access to C-DOT's MAX/RAX subscribers.

C-DOT has also been active in the area of providing telecom software solutions. C-DOT's umbrella NMS (Network Management System) solutions have made it possible to manage heterogeneous networks with elements from multiple vendors. The Data Clearing House (CLH) solution of C-DOT is commercially deployed for reconciling the GSM roaming records between BSNL and MTNL and is holding its own against competitive pressures of the market.

C-DOT is also entrusted with the projects of national importance, like Central Monitoring System for telecom security and Secure Network for strategic applications.

The state-of-the-art R&D facilities at C-DOT's Delhi and Bangalore campuses are comparable with the best in the world.

Status as on 31st March 2012

Major activities pursued during the year 2011-2012 were in line with the objectives set for 11th five-year plan. All the projects taken up in C-DOT were categorized under different schemes. The Schemes and the projects thereof, along with the status, pursued during FY 2011-12 are given below:

Scheme: Communication and security research and monitoring

The scheme focuses on research, development, trials and progressive scaling up of a Central Monitoring System (CMS). The system facilitates call interception, monitoring and analysis of target subscribers' data and social networking patterns in a secured, end-to-end work-flow, as per the requirements of Law Enforcement Agencies (LEA), to address the security threats and unlawful activities by anti-social elements who misuse the nation's communication network.

During the FY 2011-2012, R&D and pilot trials of CMS were completed with the installation and commissioning of Remote Monitoring Centre (RMC) solutions at MTNL, Delhi (planned as Phase-1a delivery), BSNL, Ambala, Haryana (Phase-1b delivery) and Tata - ILD and TSP, Delhi. Various functionalities, namely, voice interception for PSTN/ GSM/ CDMA, 3G video call, support for ILD, SMS, FAX for multiple LEAs, ISDN PRI, encrypted IRI (Intercept Related Information), etc. were supported.

CMS solutions with requisite hardware were also installed at other TSP premises of Delhi, namely, Idea, Vodafone and Airtel. Testing is in progress.

Subsequent to the CCS/CCEA approval for the roll-out of CMS technology in the 2nd week of July 2011, installations in Delhi LSA were completed for 5 TSPs, 1 ILD, and MNP operator as a pilot project. Similar installation in Haryana LSA was also completed for 1 TSP.

Scheme: Technologies for Northeast Region (NER)

North-east region has special requirements because of its topology and terrain compared to the rest of the country and also because of the demographics of a scattered population over the region. These requirements call for feasibility study of appropriate technologies for such region, their Proof-of-Concept, field-trials, specific research and development work in certain cases and adaptation/ upgradation of developed technologies.



The technologies chosen during the FY 2011-2012 for effecting improvement in the Telecom Infrastructure and facilities in the NER consisted of migration of fixed-line network to packet-based next generation network, extending broadband access at select

site(s), subject to their availability, enhancements of fixed-line migration towards IMS (IP Multimedia System) compliance, and piloting FTTH (Fibre-to-the-Home) services using C-DOT GPON technology. During the year, the technology for migrating fixed-line to the next generation packet technology has been proven in the field with 3 sites migrated to IP-based technology. Its country-wide propagation, including in NER, is being planned. Further, the technology has also been enhanced to comply with IMS standards.

A Proof of Concept trial for broadband wireless technology was also carried-out at Tripura in NER, demonstrating its application in the expansion of SWAN (State Wide Area Network). The broadband wireless is in operation in the state. Feasibility study with regard to site, application, etc. was also carried out for (i) expansion of SWAN over optical fibre at Tripura using GPON technology and (ii) FTTH service deployment in tribal areas of Chhattisgarh.

Scheme: Rural technologies

The focus of the scheme has been to develop technologies which provide affordable rural communication facilities and give impetus to the rural economy. The achievements of various projects under this scheme in the year 2011-2012 are given below are:

- Shared GSM Radio Access Network (SG-RAN)

A RAN (Radio Access Network) allowing sharing of active infrastructure of a GSM-based cellular network upto three telecom service providers has been installed at Ernakulam in Kerala LSA (Licensed Service Area) and successfully field tried.



- Data Rural Application Exchange (DRAX)

A software intensive application has been developed to interface seamlessly with 3rd party web-pages. This gives the capability to host multiple services catering to the needs of rural areas, namely, bhoomi records' access, agricultural tips, health tips, public grievances, entertainment, news, seat availability in trains, etc. Keeping in view the generally low level of literacy of our rural populace, the user interface for accessing these services has been greatly simplified by providing image driven GUI, simple input device (numeric keypad), easy card navigation, multi-lingual announcements (in English, Hindi, Kannada), etc. The system has been demonstrated its usefulness in live situations.

- Integrated Access Network Solution for Gram Panchayats

Considering the need for broadband connectivity in gram panchayats, pilot trial of 50 broadband wireless systems for last mile broadband wireless connectivity in the selected gram panchayat locations was carried out. In addition, pilot site was also identified in Chattisgarh state for extending broadband connectivity to gram panchayat using C-DOT GPON and BBWT (Broadband Wireless Terminal)

technologies. Feasibility study for the site has been completed in respect of fiber availability on the site. M/S BSNL has also been requested to allocate sites identified at Chhattisgarh for conducting field trial of the technology under TSP (Tribal Sub-Plan) programme. This technology trial will help in planning the deployment of new technologies in the remote and hilly areas of the country to catalyze the region's growth as well as to help achieve PURA (Providing Urban amenities in Rural Areas) objectives to bridge the rural / urban divide.

Scheme: Broadband technologies

Research and development focus during the year has been on packet-based broadband technology development comprising Multi-port Optical Enterprise Solution (MOES) and enabling technologies for terabit router.

- Multi-port Optical Enterprise Solution (MOES): Breakthrough in the development of MOES technology include CPEs' (Customer Premises Equipment) variants addressing requirements of urban, rural, backhaul connectivity; multi-port terminal serving many CPEs. The MOES technology is useful for providing cost-effective high bandwidth triple-play solution in



competitive urban segment, connectivity from existing E1 networks to packet-switched backbone networks and in rural areas through single fibre termination for applications like e-education, e-health, e-governance.

- Enabling technology for terabit router: Prototype terabit router was developed, which was also demonstrated and given to NKN (National Knowledge Network) for piloting. The technology breakthrough in the prototype terabit router development has given significant in-house expertise to undertake development for a high capacity commercial-grade router, which is a pivotal technology element in building very high-capacity IP-based communication networks for meeting the country's increasing bandwidth requirements in future.

Scheme: Strategic and enterprise solutions

The technology development focus during the year has been towards software-intensive applications for enterprise, development and setting-up of a secure network of strategic importance. Major accomplishments are as follows.

- Secure and Dedicated Communication Network (SDCN): Enhancement and customisation of various network elements, namely, DSLAM, router, aggregator, softswitch and development of secure VoIP phone CPE (Customer Premises Equipment) have been completed and the entire core network elements deployed in Delhi to set up the network jointly with MTNL. Network roll-out has commenced for providing secure VoIP services to 2000

subscribers in Delhi, to be expanded to cater 5000 subscribers subsequently.

- Customized Service Management Platform (CSMP): Development of a generic NMS platform with service management layers and customized applications based on industry standards (SNMP, CORBA, XML, TMF, non-TMF) was completed and piloted with IP networks. The platform can integrate with EMSs and NMSs of diverse technology domains such as TDM, IP, optical, wireless and provide element/ network service management functions.
- Commercialisation of Data Clearing House (CLH) application: This is meant for providing services commercially for national roaming between MTNL and BSNL on ASP (Application Service Provider) model for clearance of their national roaming records for roaming into their PMN (Public Mobile Network) area. The application has been developed based on GSMA specifications and is in operation commercially for last 3 years. The product has been progressively enhanced to support IOT (Inter-Operator Tariff) validations support, and NRTRDE (Near Real Time Roaming Data Exchange) engine, based on the GSMA specifications.

Scheme: Enhancements/ new features/ upgradations/ adaptations/ technical support for developed technologies

It is an ongoing technology support program to address field problems, component obsolescence,

upgradation requirements, etc, for the deployed systems.

Regular on-site and off-site technology support is being provided and accomplishments in some of the major technology programs during the year are as follows:

- MAX-NG (MAX - Next Generation):

The technology, designed to enable migration of fixed-line switches from circuit-switching to packet-based technology has been validated and tested in the field. The systems have been proven to be field-worthy, and are operational in the field and are being used in BSNL network at 3 sites. Planning for mass migration of the technology is going on.



- Fibre-to-the-Home (FTTH) services: C-DOT's VoIP solution for provisioning of voice over FTTH is being deployed and is operational in 132 cities across the country for providing triple-play services to the subscribers with optical access to the customer premises. Expansion to other cities is also going on.
- ISPs (Internet Service Providers) for lawful interception and monitoring of internet traffic: Study has been completed for all the ISPs' networks as suggested by DOT and the solution document has been submitted that comprise of BOMs and specifications for each ISP for its POPs and Gateways, for necessary infrastructure procurement on-site. During the

year, ISP monitoring system had been installed at 9 new locations.

Scheme: Basic research on telecom networks and enabling technologies/ study/pilot projects

During the year, the technology-exploration studies had been undertaken for feasibility study, prototype development/ demonstration and concept proving. These study projects were aimed at futuristic technology programs, namely, LTE-A (Long Term Evolution – Advanced), Wireless Phone Secure (WiPS), unified Network Management System (NMS), 10G Gigabit Passive Optical Network (GPON), etc.

Scheme: Campus

This is a construction project for building residential complex, including hostels, in the existing premises. Plans for construction of the residential complex have been submitted to MCD for approval. Approval has already been given by various other statutory bodies, namely, DDA, Delhi fire services, and Delhi Urban Art Commission. Final approval from MCD is awaited and hence, no expenditure could take place on this activity during this year.

Business promotion activities

During the year, significant efforts have been put in marketing and commercialization of C-DOT's technologies and support services. C-DOT participated in several exhibitions to showcase its technologies, participated singly or jointly in bidding

for tenders, submitted EoIs (Expression-of-Interest) and signed MoUs etc. A summary of the accomplishments, resulting out of these endeavours, follows.

- Transfer of Technology (ToT) agreements and NDAs signed
 - C-DOT's GPON technology was transferred to 7 manufacturers from the public sector (M/s BEL, ITI and UTL) and private companies (M/s SM Creative, VMC System Ltd, Sai Infosystems Ltd and HFCL). Shri Kapil Sibal, Hon'ble Minister of Communications & IT, Shri Milind Deora, MoS(C) and Shri Sachin Pilot, MoS(IT) handed over the ToT packages to the manufacturers in a function organised to commemorate the event.
 - NDAs (Non-Disclosure Agreement) signed for contractual relationships in respect of various technology projects, namely, LTE-A, broadband wireless, NMS, DSLAM, ADSL CPE, TDM to NGN migration, and manufacturing of PCBs.
- Technology pilots/ trials/ PoC
 - Managed Leased Line Network (MLLN): Proposal for technology trial submitted to M/s BSNL has been accepted for conducting PoC for 10,000 circuits on reimbursement basis.
 - Broadband Wireless Terminal (BBWT)
- A solution for providing connectivity between gram panchayats and village schools, as part of Broadband Application for Panchayat Public Information

Infrastructure: The e-Panchayat Experiment Site Programme, has been approved.

- The PoC at Ajmer has been completed and order for supply of C-DOT BBWT for 40 panchayat schools has been received.
 - PoC of BBWT for Mahajan Imaging Centre, to connect their 5 centres in Delhi over wireless, has been completed. PoC projects for wireless connectivity within Navy hospitals, wireless connectivity for expansion of SWAN for IT Directorate, Govt. of Tripura at Agartala and wireless connectivity for coastal surveillance system have been secured.
 - Techno-commercial proposals have been submitted for BBWT system to Mahajan Imaging Centre, Coastal surveillance system and STPI Bangalore for their last mile connectivity.
 - BBWT solution has been supplied to M/S Sankara Netralaya, Kolkata, and more leads are being pursued in healthcare segment.
- o Gigabit Passive Optical Network (GPON)
 - Proposal has been submitted for trial of GPON technology to AFNET (Air Force Network).
 - EoI in partnership with ITI has been submitted to TCIL for a GPON requirement in Kuwait.
 - o Next Generation Networks (NGN)
 - Techno-commercial proposal has been submitted to South Central Railways,
- Hyderabad, for RAX upgradation to packet-based technology. Efforts are also on to promote use of NGN technology in disaster management and WiFi signaling along tracks in all the zones of Indian Railways.
- C-DOT has been working in collaboration with M/s BEL on Tactical Communication System. C-DOT's VoIP phone and router are planned to be demonstrated in their setup.
 - Draft MoU proposal has been submitted to MTNL for executing various projects like IMS and FTTH, in MTNL network.
- o Data Rural Application Exchange (DRAX)
 - Techno-commercial proposal has been submitted for 72 DRAX systems for clusters of Central Silk Board for pan-India deployment.
 - Karnataka State Council for Science and Technology has expressed interest in DRAX solution and has asked for demonstration at NRDMS centres at Ramanagar and Shimoga, Karnataka.
 - Technology promotions
 - o C-DOT has participated in various exhibitions and marketing events like India Telecom, Convergence India, Defexpo, Health Mela at Ajmer, SES Bengaluru.
 - o C-DOT Manufacturers' Conference was held on 10-11 January, 2012, to showcase contemporary C-DOT technologies to manufacturers with a view to promote indigenous telecom manufacturing in the country.

Other Activities

Exhibitions & Conferences

C-DOT has been participating in telecom exhibitions and conferences to reach out to potential customers, collaborators and enhance the visibility of brand C-DOT. C-DOT's booths, with live demonstration of technology at work, unlike most other exhibitors, have drawn notice and high footfalls for being bigger, better and highly informative.



- C-DOT participated in the Institution of Electronics and Telecommunication Engineers (IETE)'s 42nd Mid Term Seminar at Bengaluru from 15–17th April 2011. The theme of the seminar was 'Telecom Paradigms – Indian Scenario'. Executive Director, C-DOT delivered the keynote address. C-DOT had also put up an exhibition of its technologies and products which drew many visitors on all days of the conference.
- World Telecom and Information Society Day (WTISD 2011) was celebrated at both the offices of C-DOT on 18th May 2011. Technical seminars organized on the occasion drew enthusiastic response and audience participation.
- C-DOT participated in Fibre to the Home (FTTH) Council Asia Pacific's Conference and Exhibition held at Hotel Taj Palace, New Delhi on 25-26th May 2011. C-DOT's booth at the exhibition attracted many business visitors and several enquiries were received.
- C-DOT participated in the Strategic Electronics Summit for Defence and Aerospace (SES 2011) held at HAL Campus, Bengaluru on 29th June, 2011. Mr. Vipin Tyagi, Director, gave a talk in the conference.
- C-DOT participated in Krishi Mela at Bengaluru from 16th to 20th November 2011. D-RAX was the centre of attraction at this exhibition and attracted a large number of farmers and young students. They were taken in by the simple, user friendly interface which responded to them in Kannada and did not require any computer literacy whatsoever.
- 5th December 2011 was another memorable day in C-DOT's history when, at a function held at DRDO Auditorium, Transfer of Technology (ToT) agreements for GPON were signed with 7 Indian manufacturers, which included some large PSUs as well as some private sector companies of repute, in the gracious presence of Hon'ble



MoCIT Shri Kapil Sibal and Hon'ble MOSs Shri Sachin Pilot and Shri Milind Deora. The function was attended by eminent guests from the government, the industry and the academia.

- As in previous years, C-DOT's participation in the International Conference & Exhibition "India Telecom 2011" was hugely successful. The event held at Pragati Maidan, New Delhi from 7th-9th December, 2011, was organized by the Department of Telecommunications in association with FICCI. C-DOT participated in it in a big way. The theme of C-DOT's stall was "Access C-DOT Technology, Indian to the Core, for Next Generation Networks" GPON, NGN, BBWT, NMS and D-RAX were displayed live. Many high ranking government and defence officials visited the stall and held discussions with C-DOT officials.
- C-DOT participated in 99th Indian Science Congress (ISC), held at KIIT, Bhubaneshwar on 3rd-7th January 2012. C-DOT's stall drew many eminent as well as inquisitive

young visitors. Dr Y V S Lakshmi of C-DOT participated in Women's Science Congress held as a part of ISC.

- In an effort to contribute towards rejuvenation of Indigenous Telecom R&D and Manufacturing, C-DOT organized a Manufacturers' Meet at its Delhi Campus on 10th-11th January 2012. The inaugural function of 10th January was graced by the presence of Shri Sam Pitroda, Adviser to PM on PIII, Shri Ajay Shankar, Secretary NMCC, Prof S V Raghavan, Scientific Secretary, Office of PSA, Shri S R Rao, AS(T), Shri R K Upadhyay, CMD, BSNL and Shri A K Garg, CMD, MTNL. The inaugural function was followed by a series of technical sessions, chaired by eminent experts from the Government and the industry, where the participants, mainly from the manufacturing and operating companies of the country, got to know about the technologies on offer from C-DOT and its roadmap for future. The final session saw presentations from amongst the participants.



- C-DOT showcased its technological strength at the Convergence India 2012

held at Pragati Maidan from 21-23rd March, 2012. C-DOT showcased GPON, SG-RAN, NGN, NMS and BBWT effectively through live demonstrations. Situated at a prime location, C-DOT stall was the main attraction.

- C-DOT participated in Defexpo 2012, held at Pragati Maidan from 29th March to 1st April 2012. C-DOT's stall was visited by many top ranking officials of the armed forces and defence establishments of the country.

MoUs, Agreements and Contracts

MoUs and agreements signed during the year are given in the table below:

S. No.	Type of Agreement	Date of Signing (dd/mm/yyyy)	Partner	Purpose
1.	MoU	30/08/11	Tejas Networks Ltd.	Joint working to provide integrated next generation GPON Soln.
2.	MoU	09/11/11	NTRO, New Delhi	Joint R&D for shared interests and mutual benefits
3.	MoU	02/12/11	BSNL, New Delhi	Technical support for C-DOT DSS in BSNL Network
4.	MoU	28/02/12	HFCL & HTL	Settlement of old outstanding royalty dues of M/s HTL
5.	TOT Agreement	07/07/11	VMC Systems	C-DOT GPON System
6.	TOI Agreement	30/07/11	Tejas Networks Ltd.	C-DOT GPON System- Mini OLT version
7.	TOI Agreement	15/09/11	ITI Limited	C-DOT GPON System
8.	TOI Agreement	14/10/11	Sai InfoSystem (India) Ltd.	C-DOT GPON System
9.	TOI Agreement	20/10/11	United Telecoms Ltd.	C-DOT GPON System
10.	TOI Agreement	31/10/11	Bharat Electronics Ltd.	C-DOT GPON System
11.	TOI Agreement	28/02/12	HFCL	C-DOT GPON System
12.	Project Agreement	31/10/11	Precision Electronics Ltd.	On-site Support for CMS-SNF Project on Naval ships at Vizag

13.	Project Management	01/11/11	Goldmine Advertising	Empanelment as Media Agency
14.	Project Management	02/12/11	Pehachan Advertising	Empanelment as Media Agency
15.	Project Agreement (Amdt.)	30/03/12	DOE, Min. of Finance	Implementation of LEMF Solution at Delhi Zone
16.	Licence Agreement	16/01/12	IEEE	E-learning Library
17.	Manpower Outsourcing Agreement	03/02/12	IAP Company Pvt. Ltd.	Experienced Technical Manpower for CMS Project
18.	Definitive Agreement	03/02/12	C-DOT Alcatel-Lucent Research Centre (CARC)	Development of Telecom Asset Management System
19.	Contract Agreement	29/03/12	Deptt. of Telecom	Empanelment as consultant for IPV6 services

Patents

The patents filed and design registration done during financial year 2011-12 are tabulated below:

Sl. No.	Application No.	Filing Date	Title	Status
1.	01346/DEL/2011	06.05.2011	Interconnecting Optical line terminals (OLT) to optimize the usage of network resources	REF Filed
2.	02567/CHE/2011	26.07.2011	A method for spectrum sharing in GSM-BSS	REF Filed
3.	03682/CHE/2011	27.10.2011	A communication system for managing leased line line network and a method thereof	REF Filed
5.	04012/CHE/2011	23.11.2011	An active infrastructure sharing system	REF Filed
6.	00757/CHE/2012	29.02.2012	A method and system for providing resilience in gigabit passive optical network (GPON) ring architecture	Provisional application filed

7.	01008/DEL/2012	30.03.2012	FTTP System for Passive Optical Network for minimizing fiber laying by utilizing existing laid fiber	REF Filed
8.	13/141036 United States of America	20.06.2011	Interoperability of set top box through SMART Card	Application filed
9.	107644176.3 Europe	21.06.2011	Interoperability of Set Top Box through SMART Card	Application Filed

Design Registrations:

1.	242999	09.02.2011	Telephone	
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RTI Implementation

The setup in C-DOT for implementation of RTI Act 2005 consists of one First Appellate Authority (FAA), the Chief Public Information Officer (CPIO) and two Assistant Public Information Officers (APIO)–one for each location (Delhi and Bangalore).

During the year 2011-2012, twenty two (22) new requests for information were received. All were accepted and the information was provided within the stipulated time-limit. Out of these, further appeal was made to the First Appellate Authority in three (3) cases. All the appeals were heard and decisions given. During the year, C-DOT also appointed a Transparency Officer (TO) for promotion of institutional transparency to commensurate with the spirit of the RTI act.

Process Improvement in C-DOT

Internal processes, in the CMMI framework, had been defined for the organisation for engineering, technical support, project management and process management activities directed towards development of products and services. The processes were being stabilised and practised across the organisation. This year, both the locations (at Delhi and Bangalore) underwent SCAMPI-A (Standard CMMI Appraisal Method for Process Improvement – type A) appraisal separately, and got CMMI (Capability Maturity Model Integrated) Maturity Level 3 certification.

HR Initiatives in C-DOT

During the year 2011-12 C-DOT hired 109 fresh Engineers, of Computers and Electronics & Communication stream, through Campus recruitment from IITs, NITs and other reputed

Engineering colleges. C-DOT also hired 14 experienced engineers during this period.

Women Empowerment

C-DOT's Management has always been sensitive to gender issues and has consistently worked towards creating organizational culture reflecting gender equality. Presently, about 33 % of staff in C-DOT are women.

Existing Policies:

- All female staff members are allowed to avail up to 180 days maternity leaves and up to 270 days leaves subsequent to that (inclusive of 180 days maternity leave). For miscarriage/abortion, leave of a total of 45 days in the entire service span is permissible.
- C-DOT offers accommodation and transport benefits to all its women employees with different options that maybe availed as per individual needs. This ensures the safety and security of all women employees in the company.
- Reimbursement for residential telephone expenses is admissible to about 61 % of the women staff. Multifunctional allowance is admissible to 43 % of the women employees.
- Career growth opportunities for women are available to women employees in C-DOT. In the last financial year, of the

total employees promoted to higher grades, 37% of them were women. In management cadres (Team Leaders, Group Leaders, Technical Experts and Sr. Technical Experts) about 24% are women.

- In order to address issues relating to Sexual Harassment of women staff at work place, a Committee has been constituted by CDOT Board to take a fair and justified view of the cases and recommend suitable action on the same.

Employees' Welfare:

- For the purpose of coverage for hospitalization expenses, C-DOT has taken a Tailor-made group medi-claim insurance from Oriental Insurance Company Ltd. Staff members (and their families) in executive cadres have coverage of Rs. 5 Lakhs and staff in non-executive cadres have been covered for Rs. 3.5 Lakhs. The policy has been made effective from 01 April 2006.

Recruitment of SC/ST and persons with disabilities:

For recruitment of persons with disabilities and candidates belonging to SC/ST category, C-DOT follows government rules providing for reservation in jobs in C-DOT.

C-DOT has a system in place to look after the welfare of persons belonging to these categories and address any problems / complaints that may come up.

Benefits for persons with disabilities:

- C-DOT follows guidelines issued by Government of India with respect to reservations in jobs for persons with disabilities.
- The C-DOT Campus at Delhi has been constructed in such a manner so as to ensure barrier free environment for the persons with disabilities. The main entrance/exit can be approached through a ramp together with stepped entry. Even elevators connecting the various working areas have been installed in way to facilitate persons with disabilities to move around freely from one wing to another.

Promotion of Hindi in C-DOT

C-DOT is making serious efforts to ensure compliance to the Official Language Policy of Government of India. To create awareness among the employees, C-DOT organizes different programmes throughout the year. Many innovative programmes have been initiated at both Delhi and Bangalore centres of C-DOT in this regard. Hindi workshops are held regularly on different topics

of relevance.

In an endeavor to give a new dimension to the mundane and monotonous Hindi workshops, C-DOT started an interactive programme "Samvaad". Litterateurs of repute are invited for talks in this programme. Thus, it serves dual purpose of making the employees aware of the importance of the official language Hindi while entertaining them.

On one such occasion, the famous Hindi blogger and expert and innovator of various Hindi software e-pandit Mr. Shreesh Bainjwal Sharma gave his presentation on "Hindi and Computers". He shared his wisdom and experiences with C-DOTians.



Hindi Utsav 2011 was celebrated at C-DOT offices from September 1-14, 2011 (Bangalore) and September 14-28, 2011 (New Delhi). The Utsav began with Inse Miliye.... featuring the great Hindi writer and academician Shrimati Mannu Bhandari. The house journal "C-DOT Bharti" was also released on the same day. During the fortnight, many competitions and events were organized to motivate C-DOTians to do their day-to-day work in Hindi. An audio-visual Quiz was organized in Hindi,

which was liked by one and all.

On the penultimate day of the Utsav, a drama by artistes from National School of Drama (NSD) was the main attraction. "Chekhov ki Duniya" was staged under the direction of Shri Ranjit Kapur, an acclaimed theatre genius with a distinctive directorial style. The dramatic enactment of Anton Chekhov's stories by the well-established artistes of NSD was a visual and intellectual treat for everyone.

- **Other Activities:**

C-DOT invites stalwarts in their respective fields for an informal rendezvous every quarter. The invited guest shares his/her experiences and ideas in Hindi. This not only serves the purpose of propagating Hindi, but also gives C-DOTians a chance to meet the best in the field thereby getting inspiration and motivation.



- Famous astrophysicist Padmvibhooshan Dr. J. V. Narlikar proved to be a real star during "Inse Miliye..." on 3rd June, 2011, when he gave his presentation on a complex subject like "Searches for Microlife in the Earth's atmosphere" in Hindi.
- The famous author and academician Shrimati Mannu Bhandari was an obvious choice for "Inse Miliye..." during Hindi Utsav. She was invited on Hindi Diwas i.e. 14th September, 2011. Born on April 3 in 1931, she is famous for her books such as Aapka Banti and Mahabhoj. Mahabhoj was staged as a play at several places including the Bharat Rang Mahotsav. Her writings belong to the Nai Kahani genre. She co-authored Ek Inch Muskaan with her husband, prominent Hindi writer, Rajendra Yadav. Her novel, Yahi Sach Hai was made into a film titled Rajnigandha. It won the Filmfare Best Movie Award in 1974. She also wrote dialogues for the film Swami and wrote the screenplay of Samay Ki Dharaa.

Grants and expenditure during 2011-2012

The grants in aid received during the financial year were Rs. 126 crores. The total expenditure on various schemes / projects up to 31st March 2012 is Rs. 147.76 crores.

Statements of Accounts 2011-2012

Auditors Report and the Management Replies thereto

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Report of the Auditors on the Accounts of C-DOT for the Year ended 31st March, 2012 and Management's Replies thereto

To: The Members of Centre for Development of Telematics (C-DOT)

Sl.No.	Auditor's Observations	Management's Replies thereon
1.	<p>Factual Position:- We have audited the attached Balance Sheet of Centre for Development of Telematics (hereinafter referred to as 'C-DOT' or Centre) as at 31st March 2012 and the Income and Expenditure Account for the year ended on that date, annexed thereto. These financial statements are the responsibility of the Centre's management. Our responsibility is to express an opinion on these financial statements based on our audit.</p>	Factual position is stated.
2.	<p>We have conducted our audit in accordance with generally accepted auditing standards in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.</p>	Factual position is stated.

Sl.No.	Auditor's Observations	Management's Replies thereon
3.	<p>A. Fixed Assets</p> <p>i) At Delhi Unit, physical verification of the fixed assets was conducted except for furniture & fixture and office equipments, which is pending. As a result of this pendency, the reconciliation between the physical and financial records could not be fully carried out and the effect of the differences, if any, on the financial statements to that extent cannot be ascertained at this stage.</p>	<p>Physical verification of Administrative assets like Furniture & Fixtures and Office Equipments is likely to be completed by 2012-13, and the effect of differences (if any) will be incorporated in the year 2013-14.</p>
	<p>B. Inventories</p> <p>i. Inventory is valued at cost instead of valuing at lower of cost or net realizable value which is not in accordance with the Accounting Standard 2 on 'Valuation of Inventories' issued by the Institute of Chartered Accountants of India. (Refer Policy No 5. of Schedule No.15)</p>	<p>As an autonomous body, funded by the Government, the CENTRE has followed the guidelines of the Expert Committee on uniform format of Accounts for Central Autonomous Bodies, setup at the instance of the Parliamentary Committee on Papers. This committee has suggested valuation of inventory of store and spares at "Cost".</p> <p>This practice is consistently followed, as indicated in Policy No. 5 of Schedule 15.</p>
	<p>ii. In respect of slow/non-moving components in the Inventory amounting to Rs. 85.10 lakhs as at 31-03-2012, we are unable to form an opinion as to the diminution in the value thereof.</p>	<p>As regards slow/non-moving components, the Management is constantly evolving suitable strategies either for usage of these components in the development of new products / technologies or through disposal.</p>

Sl.No.	Auditor's Observations	Management's Replies thereon
C. Investments and Loans		
i.	No Provision has been made by the Centre for decline in value of investment of Rs 52 Crores in the Equity Shares of Joint Venture Company namely C-DOT Alcatel Lucent Joint Venture Private Limited on account of total erosion of its net worth resulting in overstatement of investment and understatement of profit. (Refer Note No 3 of Part A-Schedule No.16).	<p>As the Management is engaged in the revival of the fortunes of the Joint Venture (JV) Company, alongwith the other stake holder and the government, no provision has been made in these accounts due to the erosion of the Networth of the JV.</p> <p>Appropriate accounting will be made in the financial statements of the centre for the year in which the stakeholders agree upon a revival plan for the JV.</p>
ii.	The Centre had also advanced a loan of Rs 18.46 Crores to the said Joint Venture Company in the financial year 2008-09. As per the agreement, the Joint Venture Company has defaulted in the repayment of installments. Since the net worth of the company has eroded, the recoverability of this amount and provision required, if any, cannot be commented upon.	
D. Sundry Debtors and Claims Recoverable		
i)	In the absence of confirmation and reconciliation of sundry debtors and claims recoverable amounting to Rs. 27.24 lakhs and Rs. 1989.25 lakhs respectively, we are unable to comment on their recoverability and provision required against them, if any, and consequent effect thereof on the financial statements.	The Sundry Debtors pending for confirmation are considered good for recovery since the same pertains to current year dues. The amount under Claims recoverable are considered 'good for recovery', as they are due from a 100% government of India Telecom Company and as discussions are being held at highest levels for their recovery.
ii.	The policy for making the provision against the Sundry Debtors needs to be stated and also the policy of claims recoverable from the Govt. agencies and public sector undertakings needs to be reviewed.	The suggestion of the Auditors regarding a policy on accounting for 'Sundry Debtors' is noted for implementation in future.

Sl.No.	Auditor's Observations	Management's Replies thereon
E. Employee Benefits		
i)	The provision for Leave Encashment is not made on the basis of actuarial valuation as required by the Accounting Standard 15 on 'Employee Benefits (revised 2005)' issued by the Institute of Chartered Accountants of India (Refer Note No 2(ii) of Part B - Schedule No.16) and the consequent effect thereof on the financial statements cannot be ascertained.	The centre follows the PAY-AS-YOU-GO method. Provision of leave encashed on the basis of actuarial valuation will be recognized in future years, subject to availability of matching resources.
F. Income Tax Liability		
	The Income Tax department has denied the benefit of exemption u/s 35(1)(ii) read with Section 10(21) of the Income Tax Act 1961 to the Centre. However, the case is pending with the Hon'ble Delhi High Court (Refer Note No.5 (d) of Part A - Schedule No 16).	As observed by the auditors, the Income Tax Authorities, have denied the benefit of tax exemption, available to Scientific Research Association, in the case of the centre. On being aggrieved, the centre has filed writ-petition before Hon'ble Delhi High Court seeking appropriate relief.
4.	a) We have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purposes of our audit;	
	b) In our opinion, proper books of account as required by law, have been kept by the Centre so far as appears from our examination of those books;	These statements/opinions are self explanatory and require no further comments.
	c) The Balance Sheet and Income and Expenditure dealt with by this report are in agreement with the books of account.	

Sl.No.	Auditor's Observations	Management's Replies thereon
	<p>d) In our opinion and to the best of our information and according to the explanations given to us, the said accounts read together with the Significant Accounting Policies and Notes thereon, give the information in the manner so required and give a true and fair view, in conformity with the accounting principles generally accepted in India:</p> <p>i. In the case of the Balance Sheet, of the State of affairs of the Centre as at March 31, 2012; and</p> <p>ii. In the case of the Income & Expenditure Account, of the excess of expenditure over income for the year ended on that date.</p>	<p>These statements/opinions are self explanatory and require no further comments.</p>

For M/s. Shiromany Tyagi & Co.
Chartered Accountants
(Firm Registration No.: FRN006117N)
Sd/-
(Sunil Kumar Rastogi)
Partner
M. No. 501378

For Centre for Development of Telematics

Sd/-
(V.V.R. Sastry)
Executive Director

Balance Sheet as at 31st March...

(In Rupees)

	Schedule No.	2012	2011
CORPUS / CAPITAL FUND AND LIABILITIES			
Corpus/Capital Fund	1	3,429,115,714.44	3,141,358,097.14
Reserves & Surplus	2	23,658,685.67	23,658,685.67
Current Liabilities & Provisions	3	249,809,043.62	362,765,671.06
TOTAL		3,702,583,443.73	3,527,782,453.87
ASSETS			
Fixed Assets	4		
Gross Block		4,716,713,731.69	4,652,641,574.93
Less :- Depreciation		3,620,399,389.23	3,460,202,775.16
Net block		1,096,314,342.46	1,192,438,799.77
Assets in transit	4	3,385,000.00	814,578.56
Capital Work in Progress	5	4,459,882.00	4,459,882.00
Investments-Long Term	6	520,000,000.00	520,000,000.00
Current Assets, Loans & Advances and Deposits	7	2,078,424,219.27	1,810,069,193.54
TOTAL		3,702,583,443.73	3,527,782,453.87
Significant Accounting Policies	15		
Notes on Accounts	16		

Schedules 1 to 7 , 15 and 16 form an integral part of the Balance Sheet

For and on behalf of the
Centre for Development of TelematicsSd/-
P. Venkatesan
Chief Finance OfficerSd/-
V.V.R.Sastry
Executive DirectorIn terms of our report of even date attached
For M/S Shiromany Tyagi & Co
Chartered Accountants
Firm Regn. no. FRN006117NSd/-
CA. Sunil Kumar Rastogi
Partner
M.No. 501378Place: New Delhi
Date : 27.09.2012

Income and Expenditure Account

for the year ended 31st March...

(In Rupees)			
	Schedule No.	2012	2011
INCOME			
TOT, Royalty, FSR and Publications	8	459,667,291.00	327,037,743.00
Interest Earned	9	91,946,422.03	14,128,037.29
Other Income	10	10,859,503.89	13,579,160.65
TOTAL(A)		562,473,216.92	354,744,940.94
EXPENDITURE			
Establishment Expenses	11	870,394,396.98	764,626,325.50
Operational Expenses	12	318,780,656.67	220,340,236.23
Other Administrative Expenses	13	198,066,912.02	199,729,545.09
Depreciation	4	184,405,806.55	186,919,110.60
TOTAL(B)		1,571,647,772.22	1,371,615,217.42
Excess of expenditure over income for the year C =(B-A)		1,009,174,555.30	1,016,870,276.48
Add/less(-) :- Adjustments pertaining to earlier years	14	-36,932,172.60	-6,963,715.90
Balance being excess of expenditure over income		972,242,382.70	1,009,906,560.58
Add:- Excess expenditure over income of earlier years		12,061,095,064.98	11,051,188,504.40
Balance being deficit carried to Corpus Fund/Capital Fund		13,033,337,447.68	12,061,095,064.98
Significant Accounting Policies	15		
Notes on Accounts.	16		

Schedules 4,8 to16 form an integral part of the Income and Expenditure Account

For and on behalf of the
Centre for Development of Telematics

Sd/-
P. Venkatesan
Chief Finance Officer

Sd/-
V.V.R.Sastry
Executive Director

In terms of our report of even date attached
For M/S Shiromany Tyagi & Co
Chartered Accountants
Firm Regn. no. FRN006117N

Place: New Delhi
Date: 27.09.2012

Sd/-
CA. Sunil Kumar Rastogi
Partner
M.No. 501378

Schedule - 1

Corpus / Capital Fund

(Forming part of the Balance Sheet as at 31st March...)

(In Rupees)

	2012	2011
Grants from Dept. of Electronics (Presently Dept of Information Technology)		
Accumulated balance	335,200,000.00	335,200,000.00
Grants from Dept. of Telecommunication		
Balance at the beginning of the year	14,867,253,162.12	14,230,153,162.12
Add:- Contributions towards Corpus/Capital		
Fund during the year	<u>1,260,000,000.00</u> 16,462,453,162.12	<u>637,100,000.00</u> 15,202,453,162.12
Less:- Balance of net expenditure transferred from the Income and Expenditure Account	13,033,337,447.68	12,061,095,064.98
TOTAL	3,429,115,714.44	3,141,358,097.14

Schedule 2

Reserves & Surplus

(Forming part of the Balance Sheet as at 31st March...)

(In Rupees)

	2012	2011
General Reserve		
Balance at the beginning of the year	23,658,685.67	23,658,685.67
Less: Provisions withdrawn during the year	<u>0.00</u> 23,658,685.67	<u>0.00</u> 23,658,685.67
TOTAL	23,658,685.67	23,658,685.67

Schedule 3

Current Liabilities & Provisions

(Forming part of the Balance Sheet as at 31st March...)

(In Rupees)

	2012	2011
CURRENT LIABILITIES		
1. Sundry Creditors		
a) For Goods	31,437,334.90	18,528,897.12
b) Others	64,393,432.28	58,386,418.00
2. Advances received		
- For Funded Projects	23,409,224.60	13,016,273.60
3. Statutory Liabilities	17,115,494.00	17,105,633.00
4. Other Current Liabilities	113,453,557.84	70,956,375.34
Sub-total(A)	249,809,043.62	177,993,597.06
PROVISIONS		
1. Gratuity	0.00	182,280,315.00
2. 6th Pay Commission salary arrears	0.00	2,491,759.00
Sub-total(B)	0.00	184,772,074.00
TOTAL(A+B)	249,809,043.62	362,765,671.06

Schedule 4

Fixed Assets

(Forming part of the Balance Sheet as at 31st March'2012)

(In Rupees)

	G r o s s B l o c k			D e p r e c i a t i o n			N e t B l o c k		
	As on 01.04.2011	Additions	Adj./Write-off	As on 31.03.2012	As on 01.04.2011	For the year	Adj./Write-off	As on 31.03.2012	As on 31.03.2011
Land -Free Hold	120,000,000.00	0.00	0.00	120,000,000.00	0.00	0.00	0.00	120,000,000.00	120,000,000.00
Building-Office	570,180,967.65	0.00	0.00	570,180,967.65	265,389,573.17	30,479,139.45	0.00	295,868,712.62	274,312,255.03
Building-Residential	23,627,434.00	0.00	0.00	23,627,434.00	12,560,788.27	553,332.29	0.00	13,114,120.56	10,513,313.44
R & D Equipment	2,548,932,268.04	46,247,445.21	(94,626,111.62)	2,500,553,601.63	2,052,695,921.42	79,845,489.52	(84,445,583.25)	2,048,095,827.69	11,066,645.73
R& D Computers	724,961,263.37	41,804,380.95	62,354,989.99	829,120,634.31	705,523,791.33	36,529,325.65	62,714,633.57	804,767,750.55	496,236,346.62
Office Equipments &									19,437,472.04
Appliances	351,014,456.74	1,429,384.00	(9,292,302.18)	343,151,538.56	235,191,404.35	17,311,888.63	(7,452,456.60)	245,050,836.38	115,823,052.39
Furniture & Fixtures	269,239,754.77	3,063,230.00	7,565,261.46	279,868,246.23	144,155,866.26	12,953,046.01	6,181,919.85	163,290,832.12	125,083,888.51
Library Books	44,685,430.36	6,733,585.00	(1,207,706.05)	50,211,309.31	44,685,430.36	6,733,585.00	(1,207,706.05)	50,211,309.31	0.00
Total	4,652,641,574.93	99,278,025.16	(35,205,868.40)	4,716,713,731.69	3,460,202,775.16	184,405,806.55	(24,209,192.48)	3,620,399,389.23	1,192,438,799.77
Assets in transit								3,385,000.00	814,578.56
Previous year's total	4,573,728,680.61	94,118,318.39	(15,205,424.07)	4,652,641,574.93	3,286,559,965.09	186,919,110.60	(13,276,300.53)	3,460,202,775.16	1,287,168,715.52

Schedule 5

Capital Work in Progress

(Forming part of the Balance Sheet as at 31st March'2012)

(In Rupees)

	As at 01.04.2011	Additions	Transfer to Fixed Assets	As at 31.03.2012
Campus -Delhi				
1) Campus-Residential Complex	4,459,882.00	0.00	0.00	4,459,882.00
Total	4,459,882.00	0.00	0.00	4,459,882.00
Previous Year Balance	4,459,882.00	0.00	0.00	4,459,882.00

Schedule 6

Investments - Long Term

(Forming part of the Balance Sheet as at 31st March...)

(In Rupees)

	No. of Fully Paid Equity Shares	Face Value Per Share (Rs.)	2012	2011
UNQUOTED (At Cost)				
JOINT VENTURE COMPANY				
1. C-DOT Alcatel-Lucent Research Centre Pvt. Ltd. (CARC)	52,000,000	10	520,000,000.00	520,000,000.00
TOTAL			520,000,000.00	520,000,000.00

Schedule 7

Current Assets, Loans & Advances and Deposits

(Forming part of the Balance Sheet as at 31st March...)

(In Rupees)

	2012	2011
A. CURRENT ASSETS		
1 Inventories (As taken, valued and certified by the Management)		
a) Inventory	210,041,207.59	119,850,220.91
b) Inventory in transit	6,695,441.05	8,325,144.51
2 Sundry Debtors		
a) Debts outstanding for a period exceeding six months	362,603,747.00	362,894,063.00
b) Others	160,480,260.00	81,999,500.00
	523,084,007.00	444,893,563.00
Less:-Provision for Bad & Doubtful Sundry Debtors	68,990,982.00	50,053,067.00
3 Bank Balances -		
With Scheduled banks		
a) On Deposit Accounts	419,927,707.50	426,285,207.41
b) On Saving Accounts	277,362,950.82	183,890,099.28
TOTAL (A)	1,368,120,331.96	1,133,191,168.11
B. LOANS & ADVANCES		
1 Loans		
a) Staff	3,296,349.00	2,973,199.00
b) CARC Pvt Ltd	184,578,500.00	184,578,500.00
2 Advances and other amounts recoverable in Cash or in kind or for value to be received.		
a) Contractors & Suppliers	30,622,520.63	21,080,297.22
b) Employees	4,786,349.00	1,699,748.00
c) Prepaid expenses	6,032,774.01	10,409,230.25
3 Interest Accrued		
a) On Staff Loan	317,902.59	260,323.45
b) On Bank Deposits	8,113,398.29	2,741,600.70
c) CARC Loan	19,989,095.00	7,976,403.00
4 Claims Recoverable	198,924,840.35	237,218,062.59
5 Tax Deducted at Source	164,856,296.44	124,303,629.44
6 Disputed Income tax	81,031,283.31	77,554,580.31
7 Centvat credit receivable	3,842,845.69	1,492,818.47
TOTAL (B)	706,392,154.31	672,288,392.43
C. DEPOSITS		
a) Office Building	40,500.00	40,500.00
b) Others	3,871,233.00	4,549,133.00
TOTAL (C)	3,911,733.00	4,589,633.00
TOTAL (A)+(B)+(C)	2,078,424,219.27	1,810,069,193.54

Schedule 8

Income from TOT, Royalty, FSR and Publications

(Forming part of Income & Expenditure Account for the year ended 31st March...)

(In Rupees)

	2012		2011	
1) Income from Royalty				
- Received in Cash	13,467,714.00		12,500,000.00	
- Accounted on accrual basis	<u>0.00</u>	13,467,714.00	<u>0.00</u>	12,500,000.00
2) Income from Transfer of Technology (TOT)				
- Received in Cash	6,000,000.00		800,000.00	
- Accounted on accrual basis	<u>1,200,000.00</u>	7,200,000.00	<u>0.00</u>	800,000.00
3) Field Support Receipts (FSR)		438,887,052.00		313,689,743.00
4) Income from Publications				
- Campus-On Sale of Tender/ Technical documents	0.00		3,000.00	
- Others	<u>112,525.00</u>	112,525.00	<u>45,000.00</u>	48,000.00
TOTAL		459,667,291.00		327,037,743.00

Schedule 9

Interest Earned

(Forming part of Income & Expenditure Account for the year ended 31st March...)

(In Rupees)

	2012	2011
1) On Term deposits with Scheduled Banks	22,426,577.26	9,176,437.21
2) On Saving Account with Scheduled Banks	5,820,044.63	3,848,849.63
3) On Loans to Employees/Staff	294,077.14	252,657.45
4) On loans to Others	63,401,322.00	0.00
5) Others	4,401.00	850,093.00
TOTAL	91,946,422.03	14,128,037.29

Schedule 10

Other Income

(Forming part of Income & Expenditure Account for the year ended 31st March...)

(In Rupees)

	2012	2011
1) Profit on Sale/disposal of Assets	6,675.00	4,968.00
2) Miscellaneous Income	10,692,136.43	13,426,306.45
3) Gain due to foreign exchange translation	160,692.46	147,886.20
TOTAL	10,859,503.89	13,579,160.65

Schedule 11

Establishment Expenses

(Forming part of Income & Expenditure Account for the year ended 31st March...)

	(In Rupees)	
	2012	2011
a) Salaries and Wages	620,860,582.00	525,153,821.00
b) Bonus	839,322.00	866,954.00
c) Contributions to Provident Fund	55,760,248.00	47,299,508.00
d) Contributions to other Funds	5,441,239.00	5,403,390.00
e) Gratuity provided for employees	24,703,868.00	29,018,570.00
f) Staff Welfare expenses	142,183,542.95	135,797,287.50
g) Rent on residentials and Maintenance Expenses	15,537,655.00	17,784,403.00
h) Recruitment and Training Expenses	5,067,940.03	3,302,392.00
TOTAL	870,394,396.98	764,626,325.50

Schedule 12

Operational Expenses

(Forming part of Income & Expenditure Account for the year ended 31st March...)

(In Rupees)

	2012	2011
a) R &D Components & Consumables	201,729,570.39	123,838,626.00
b) Freight & Forwarding Charges	8,962,512.28	8,723,237.36
c) Repair & Maintenance-R&D & Office Equipments	67,927,683.36	64,719,417.87
d) Design, Development & Technology support Expenses	18,674,440.64	894,001.00
e) Consultancy Expenses	20,390,728.00	22,000,139.00
f) Testing Charges	1,095,722.00	164,815.00
TOTAL	318,780,656.67	220,340,236.23

Schedule 13

Other Administrative Expenses

(Forming part of Income & Expenditure Account for the year ended 31st March...)

(In Rupees)

	2012	2011
a) Travelling and Conveyance expenses	20,501,847.00	16,781,704.75
b) Vehicle hire charges	2,543,162.00	1,379,941.00
c) Rent, Rates & Taxes	2,037,506.00	2,040,113.00
d) Electricity & Water Charges	62,420,593.00	55,955,328.00
e) Repairs & Maintenance-Others	37,989,740.13	29,160,024.00
f) Newspaper , Periodicals, Journals & CDs	1,216,384.00	6,895,415.00
g) Insurance Charges	410,909.00	484,438.00
h) Printing, Stationery, Photocopy & Admin Consumables	12,144,969.77	9,576,741.01
i) Postage, Telephone and Communication Charges.	15,158,599.48	12,125,361.23
j) Exhibition, Advertisement & Publicity Expenses	11,271,277.00	7,867,552.00
k) Expenses on Conference/Seminar/Membership Fees	3,611,712.00	2,047,246.85
l) Legal, Professional fees & Honorarium	2,313,330.00	2,674,007.00
m) Patent fees	1,127,921.00	793,177.00
n) Remuneration to Auditors		
Audit Fees	250,000.00	250,000.00
Out of pocket expenses	75,500.00	84,221.00
In other capacities	<u>0.00</u>	<u>7,207.00</u>
o) Hospitality/Entertainment Expenses	141,320.00	74,480.50
p) Bank Charges	888,102.89	1,186,560.62
q) Loss due to foreign exchange translation	55,184.54	250,154.81
r) Miscellaneous Expenses.	160,213.96	42,805.32
s) Loss on sale of Assets	4,810,725.15	0.00
t) Provision for Bad & Doubtful Debts	18,937,915.00	50,053,067.00
TOTAL	198,066,912.02	199,729,545.09

Schedule 14

Adjustments Pertaining to Earlier Years (Net)

(Forming part of Income & Expenditure Account for the year ended 31st March...)

(In Rupees)

	2012		2011	
	Debit	Credit	Debit	Credit
INCOME				
TOT, Royalty, FSR and Publications	0.00	33,771,439.00	0.00	5,550,320.00
Interest Earned	0.00	18,590.00	0.00	3,152,208.00
Other Income	77,340.00	0.00	0.00	0.00
EXPENDITURE				
Establishment Expenses	0.00	75,942.00	0.00	124,294.00
Operational Expenses	0.00	8,923,183.32	14,148,027.98	0.00
Other Administrative Expenses	106,808.00	0.00	981,692.65	0.00
Depreciation	5,672,833.72	0.00	0.00	13,266,614.53
TOTAL	5,856,981.72	42,789,154.32	15,129,720.63	22,093,436.53
Net Debit/Credit		36,932,172.60		6,963,715.90

Schedule 15

Significant Accounting Policies

(Forming part of the Accounts for the year ended 31st March 2012)

Sl.No.	Policy Statement
1.	<p>General</p> <p>The financial statements for the year, comprising of the Balance Sheet, the Income & Expenditure Account and the Schedules bearing the numbers 1 to 14, which are based upon the policies stated here under, are prepared following the “going concern” concept.</p> <p>.....</p>
2.	<p>Fixed Assets Accounting</p> <p>a. These are stated at their historical costs.</p> <p>b. Assets in the form of R&D Equipment etc., purchased during the year under arrangements like letters of credit etc., are accounted for as follows:-</p> <p>i. Where such assets are received on or before the Balance Sheet date and put to use, the values thereof are capitalized, depreciation at applicable rates provided thereon and provision for the liability for the gross value thereof is created in the accounts for the year.</p> <p>ii. Where such assets are not received, but the documents relating thereto are received, on or before the Balance Sheet date, the values thereof are disclosed as 'Assets in Transit' and disclosed distinctly in the Schedule on Fixed Assets (Schedule 4). While provision for the liability on account of such assets in transit is made in the Accounts, no depreciation is provided in respect of such values.</p> <p>iii. Where neither such assets nor the documents therefor are received by the Centre by / before the Balance Sheet, no effect is given in the accounts in respect of the values thereof.</p> <p>c. The Management directs conduct of physical verification of Fixed Assets and their reconciliation with financial records. Such exercise is undertaken at regular intervals, taking into account the nature / size of activities of the Centre.</p> <p>.....</p>

Sl.No.	Policy Statement
3.	<p>Accounting for Capital Work-in-Progress</p> <p>Expenditure incurred on the R&D Campus of the Centre and on the facilities like Hostel/residential accommodation for trainees /staff etc. is disclosed under this head until the activities are completed and the aggregate value capitalized.</p>
4.	<p>Depreciation on Assets</p> <p>a. The provisions of Appendix I to the Income Tax Rules, 1962, (The Rules), as amended from time to time, are applied with the exceptions indicated at (b) below.</p> <p>b. Exceptions to (a) above:</p> <ol style="list-style-type: none"> Assets put to use anytime during the year are depreciated at the full rate prescribed by the RULES. Assets, the individual cost of each of which is not more than Rs. 5000, the whole of such costs is charged to the revenue in the year of acquisition itself. Assets, being library books purchased during the year, are capitalized and depreciated fully in the same year, irrespective of individual values thereof. Assets, which are sold or discarded or lost or disposed off during the year, do not suffer depreciation for such year. In respect of computer software, the lower rate of depreciation, prescribed by The Rules for plant and Machinery has been continued to be applied, in spite of the fact that the provisions of the Rules prescribed a lower rate for plant and machinery and higher rate for computer software.
5.	<p>Valuation of year-end Inventory of Components</p> <p>a. These are valued at 'cost'.</p> <p>b. For the purpose, the term 'cost' includes related 'overheads', determined by the Management, from time to time, using the 'Moving Weighted Average Method'.</p> <p>c. The value of such inventory may include the value of stores, which are slow moving. The diminution in the value of such slow moving stores is recognized only in the accounts of the year in which such stores are disposed off.</p>

Sl.No.	Policy Statement
6.	Accounting for loans to employees <ol style="list-style-type: none"> Such loans are recovered in equal monthly installments not exceeding 40. The principal amount of the loan is first recovered over the number of installments, not exceeding 40, agreed to by the employee. Interest accrued on the loans given to the employees on each intervening balance sheet date is assumed in the accounts. As the recovery of the principal amount of the loans to employees and the interest due thereon is made through monthly salaries of the employees concerned, these are assumed to be "confirmed" and accepted by the employees. No separate confirmation process is undertaken. The amounts due from employees who, after taking loans from the Centre, leave the services of the organization before full settlement, are recovered from the final settlement made to such employees.
7.	Accounting for Advances <ol style="list-style-type: none"> To employees <ol style="list-style-type: none"> Advances to employees in relation to official travel / LTC / Miscellaneous Expenditure of the organization fall in this category. Such advances do not bear any interest and are normally recovered within the time limits prescribed for each such advance. The balance of such advance is also recovered from the employees through their monthly salaries. Therefore, as in the case of "loans to employees", these advances are taken as confirmed and accepted by the concerned employees. No separate confirmation process is undertaken. To suppliers and contractor <ol style="list-style-type: none"> Advances given under the relevant agreements with contractors for supplies and services fall in this category. Similarly, payments made to suppliers /contractors under Purchase Orders etc. for supplies / services, through arrangements made through official bankers, also fall in this category. Such advances are adjusted in the normal course and upon completion of supplies / rendering of services by the contractor / service provider.

Sl.No.	Policy Statement
8.	<p>Accounting for Deposits given</p> <p>a. To landlords for residential accommodation leased by the Centre for staff.</p> <ol style="list-style-type: none"> At Bangalore, advance of upto ten months rent is paid. This advance, not being recoverable during the lease period, is accounted under the head "Deposits" and shown as such till the lease comes to an end. Such Deposits do not earn any interest as per prevailing practice. In such cases, rent is also paid to the landlord, in addition to the deposits as above, which is accounted for as expenditure of the year. On the other hand, at Delhi, advance of upto three months rent is paid to the landlord at the beginning of the lease. But, the same is treated as rent and no rent is paid for a period of three months from the commencement of the lease. Therefore, "Deposits" do not generally arise at Delhi. <p>b. Miscellaneous Deposits</p> <ol style="list-style-type: none"> Deposits made to public utilities like water, electricity and gas suppliers are booked under this category. Such deposits are retained in the books as deposits until the services are continued to be used.
9.	<p>Accounting for Current Assets and Liabilities</p> <p>a. Current Assets</p> <ol style="list-style-type: none"> Expenditure incurred by the Centre on projects undertaken by it for other agencies is shown under "Claims recoverable" and included under "Current Assets", until such balances are realized from the said agencies. Fees for Transfer of Technology (TOT) and Royalty on sale of products based on such technologies, fees for Field Support/Technology support rendered by the Centre to the Telecom Operators, which have been accounted for on accrual basis, are treated as part of "Sundry Debtors" and included under "Current Assets" until realization. Balances due to the Centre, on account of the expenditure indicated in a(i) above, are treated as good for recovery, if the same are due from Govt. agencies and public sector organizations.

Sl.No.	Policy Statement
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b. Current Liabilities

- i. Advances received from Telecom Operators / other agencies for projects undertaken by the Centre on "Reimbursement Basis" are shown as "Advances received for funded projects" and shown in the schedule on "Current Liabilities and Provisions".
- ii. Provision for the aggregate of the values of the goods / services received on the Balance Sheet date is made in these financial statements, when such values remained unpaid on that date in spite of the bills having been received.
- iii. Similarly, provision is also made for the values of goods / services received during the year, even though the claims therefor in the form of bills etc. were not received on that date.
- iv. No provision is made in these financial statements in other cases.

10. Investments

- a. The aggregate of the contributions to the equity capital of another R&D company in the field of telecommunications, has been disclosed under this head.
- b. These investments are considered "Long Term in Nature".
- c. Such investments are shown in these financial statements at "Costs".

11. Accounting for Components and Consumables purchased during the year

- a. Where the materials have been received on the Balance Sheet date but the payments have not been made, corresponding liability created.
- b. Where the materials are in transit and payments have not been made though the relevant documents have been received on or before the balance sheet date, the value of such materials is disclosed under "Inventory in Transit" with corresponding liability created.

Sl.No.	Policy Statement
12.	<p>Accounting for transactions involving foreign exchange</p> <p>a. Income and Expenditure Account</p> <p>i. Transactions in foreign exchange having an impact on the income and expenditure for the year are converted into Indian currency and stated in these financial statements.</p> <p>ii. For the purpose of conversion, the rates of exchange prevailing on the respective dates of incidence of expenditure / receipt of income are adopted.</p> <p>b. Receivables and Payables</p> <p>i. Transactions in foreign exchange having an impact on the receivable / payable accounts, forming part of the Balance Sheet, are also converted into Indian currency.</p> <p>ii. For the purpose of such conversion, the rate of exchange prevailing on the balance sheet date is adopted.</p> <p>.....</p>
13.	<p>Accounting for Grants-in-aid from the Government of India</p> <p>a. These are accounted for on the basis of the dates of the sanction memoranda there for, irrespective of the actual dates of receipt of the grants.</p> <p>b. Grants-in-aid received from the Government has been consistently shown under "Corpus / Capital Funds" and included in the Liabilities side of the Balance Sheet.</p> <p>.....</p>
14.	<p>Revenue Recognition</p> <p>a. Income and Expenses are accounted for on accrual basis.</p> <p>b. However, in the following cases, the underlying expenditure is recognized in the Accounts for the year of incidence thereof.</p> <p>i. Ex-gratia payment to the eligible employees of the Centre, as per applicable policy from time to time is treated as expenditure of the year, only when the policy for such payment to employees' at the corresponding levels in the Govt. of India, Department of Telecommunications, is known for the concerned year;</p>

Sl.No.	Policy Statement
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- ii. Expenditure on account of leave encashed by the employees are accounted on incidence basis.
- c. Projects undertaken by the CENTRE for Telecom Operators:
 - i. In respect of projects undertaken by the Centre for Telecom Operators and other agencies, the expenses and income in relation to these, are accounted for as expenditure / income respectively, only upon completion of the milestones related to project.
- d. Adjustments pertaining to earlier years
 - i. Both income and expenditure relating to past financial years are accounted for under this head.
 - ii. An adjustment is treated as pertaining to earlier years only when all the following conditions are simultaneously satisfied.
 - a. The adjustment is the result of a clerical error
 - b. Such a clerical error is detected only in the current financial year.
 - c. Such a clerical error relates to one or more past financial years and does not arise in respect of the current year; and
 - d. The value of this clerical error exceeds Rs. 5000 in each case.

15. General

- a. Previous year's figures have been regrouped or rearranged, wherever necessary.

Schedule 16

Notes on Accounts

(Forming part of the Accounts for the year ended 31st of March, 2012)

PART - A : Balance Sheet

1.0 Fixed Assets

- a. Fixed assets include land at New Delhi measuring 40 acres (Previous Year-40 acres) was acquired in 1993 from Government of India . This land has been considered free hold, even though no formal conveyancing has been done in favour of the CENTRE.
- b. Discrepancies between physical and financial records, noticed during the previous year, in respect of Fixed Assets except furniture & fixture and office equipment at Delhi Unit, have been reconciled and appropriately accounted for in making these accounts (refer Schedule 13)

2.0 Capital Work-in-Progress

- a. This represents the cumulative expenditure, incurred since 2008-09, on the proposed Housing facility at the Campus at New Delhi, amounting to Rs. 44.60 lakhs as at 31.03.2012. (Previous Year - Rs. 44.60 lakhs)
- b. The expenditure under this head will be capitalized appropriately under "Fixed Assets", upon completion of the Housing Facility. (Refer para 3 of Schedule 15)

3.0 Investments

- a. The aggregate of the investments in the equity of a Joint Venture Company engaged in Scientific Research in the field of Telecommunications was Rs. 5200.00 lakhs as at 31.03.2012. (Previous Year - Rs. 5200.00 lakhs)
 - b. As one of the promoters of the Company, C-Dot is exploring the possibility of reviving that company. As a consequence, no provision has been made in these accounts in respect of the erosion of the net worth of that company as at 31.03.2012.
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4.0 Current Assets, Loans, Advances and Deposits

- a. Inventory of Components includes:
 - i. An amount of Rs. 85.10 lakhs as at 31.03.2012, (Previous year Rs. 151.24 lakhs) being components which remained unmoved for more than three years on the balance sheet date . The Management views that these components may still be used in the current and future R&D programmes of the Centre.
 - ii. The value of Components, which were purchased in the past years, issued to the indentors, treated as consumed in the accounts of the year of issue, but part of which were returned to the stores during the current year by the indenting groups unconsumed – Rs. 89.40 Lakhs as at 31.03.2012 (Previous Year - Rs. 1.01 lakhs)
- b. Sundry Debtors amounting to Rs. 5230.84 lakhs includes:
 - i. On account of TOT & Royalty dues of Rs. 2279.99 lakhs as at 31.03.2012 (Previous Year - Rs. 2279.99 lakhs) due from the concerned licensee has been fully met by the value of the land and buildings at Bangalore belonging to that licensee taken over / occupied by the Centre since 2005.
 - ii. On account of dues for other services rendered to Telecom companies Rs. 1632.04 lakhs as at 31.03.2012. (Previous Year - Rs. 1009.52 lakhs).

- iii. On account of Royalty dues of one of the licensees, the same are being received in installments. The balance as at 31.03.2012 was Rs. 628.90 lakhs (Previous Year - Rs. 658.90 lakhs)
- iv. The balance amount of Rs. 689.91 lakhs as at 31.03.2012 (Rs. 500.53 lakhs as at 31.03.2011) provision has been made in these Accounts.
- c. Claims Recoverable:
 - i. The aggregate of the amount realizable by the Centre as at 31.03.2012, on account of projects undertaken by it for the other organizations on reimbursement of cost basis, was Rs. 1989.25 lakhs (Previous Year - Rs. 2372.18 lakhs). All these amounts, which are included under "Claims Recoverable", are considered good for recovery. Hence, no provision has been made in respect thereof, while making these accounts.

5.0 Contingent Liability not provided for

- a. On account of unexpired letters of credit issued by bankers in respect of purchase orders for procurement of components and equipment – Rs. 75.20 lakhs as at 31.03.2012 (Previous Year - Rs. 382.08 lakhs)
- b. On account of bank guarantees given by / on behalf of the Centre of Rs. 8.80 lakhs as at 31.03.2012 (Previous Year - Rs. 8.80 lakhs).
- c. On account of pending legal cases, the amount outstanding is Rs. 20.87 lakhs. (Previous year Rs. 20.87 lakhs). The Centre has also filed counter claims amounting to Rs. 551.73 lakhs (Previous Year Rs. 551.73 lakhs) which are not accounted for.
- d. Income Tax Assessments:-
 - i. Income Tax demanded by the Department, disputed by the Centre, for the Assessment Years 2003-04, 2005-06, 2006-07, 2007-08, 2008-09 and 2009-10 amounted to Rs. 9547.00 lakhs including interest (previous year, for Assessment Years 2003-04, 2005-06 to 2008-09–Rs. 7538.30 lakhs).

- ii. The Centre has filed writ petitions before the Hon'ble High Court at Delhi, which granted stay of demand.
- iii. Notwithstanding the above, the department has adjusted and withdrawn from the Centre's account Rs. 810.31 lakhs (previous year Rs. 775.55 lakhs), which has been protested by the Centre.
- iv. For the balance amount of the tax demanded, for the years indicated in (i) above, no liability is considered in these accounts, in view of (ii) above.

PART - B : Income & Expenditure

1.0 Income:-

- a. The amount of Rs. 93.44 lakhs (Previous Year: Rs. 652.51 lakhs), which is indicated in the Tax Credit System (FORM 26AS) in the Public domain, has not been considered in these accounts, as the Centre is not able to relate this amount to any of the services rendered in the current year.

2.0 Expenditure:-

A. Employees' Benefits:-

i. Gratuity:-

During the year, the Centre has created a Gratuity Fund Trust (Gratuity Trust) for the benefit of all eligible employees. The liability of the Centre on account of Gratuity in respect of all employees on rolls at the end of the year was got ascertained by an actuary. The value of this liability as at end of current year was Rs. 2069.84 Lakhs (previous year Rs. 1822.80 lakhs). The Gratuity Trust, which is managed by a separate Board of Trustees comprising of employees, will henceforth be discharging the liability on this account.

ii. Earned Leave (EL)

As per Rules of the Centre, Earned Leave is encashable by serving employees as well as by those leaving the services, either on superannuation or otherwise. However, no provision is being made in these accounts on account of the liability in respect of Earned Leave of employees. Had such a provision being made, the expenditure for the year would have been higher by Rs 2193.47 lakhs (Previous year - Rs.1822.70 lakhs)

B. Consumption of Components:-

- i. As per the practice followed consistently, the value of consumption is arrived at by reducing the value of closing stock from the aggregate of the values of opening stock and the purchases made during the year.
- ii. Accordingly, the value of components consumed during the year was Rs. 2017.30 Lakhs. (previous year Rs. 1238.39 Lakhs)

C. Adjustments Pertaining to earlier years (Net):-

- i. Income and Expenditure under this head (refer Schedule 14), includes income of Rs. 337.13 lakhs (previous year Rs. 87.03 lakhs) and expenditure of Rs. -32.19 lakhs (previous year Rs. 17.39 lakhs)

D. Foreign Exchange Fluctuations:-

- i. The net result of the fluctuations in Foreign Exchange on account of the transactions during the year was a gain of Rs. 1.06 Lakhs (Previous Year 2010-11. Loss of Rs. 1.02 Lakhs)
- ii. However, the gains and losses on account of such fluctuations are distinctly disclosed in Schedule 10 and 13 respectively.

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PART - C : GENERAL

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- a. The nature of activities of the Centre is such that these have been assumed to be not resulting in any 'manufacture' and 'sale' of products. As a consequence, the provision of the statutes relating to taxation on manufacture and Sale of Products are not deemed to apply in the case of the Centre. However, some of the technical services rendered by the Centre have been recognized as services attracting the levy of service tax. In such cases, applicable taxes have been either paid or admissible credits therefor assumed, in making these Accounts.
- b. Previous Year's figures have been re-grouped/re-arranged, wherever necessary.
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Sd/-
P. Venkatesan
Chief Finance Officer

Sd/-
CA. Sunil Kumar Rastogi
Partner
M/s. Shiromany Tyagi & Co
Chartered Accountants
M.No. 501378
FRN – FRN006117N

Sd/-
V.V.R. Sastry
Executive Director

Our Bankers

Canara Bank

C-DOT Campus, Mehrauli,
New Delhi-110 030

Syndicate Bank

Corporate Finance Branch
6, Sarojini House, Bhagwan Dass Road
New Delhi-110 001

Canara Bank

Electronic City-I, Hosur Road,
Bengaluru-560 100

Central Bank of India

Sona Towers, 71/1, Millers Road
Bengaluru-560 100

Our Statutory Auditors

Shiromany Tyagi & Co.

Chartered Accountants
18, Netaji Subhash Marg
Daryaganj
New Delhi-110 002

Our Offices

C-DOT

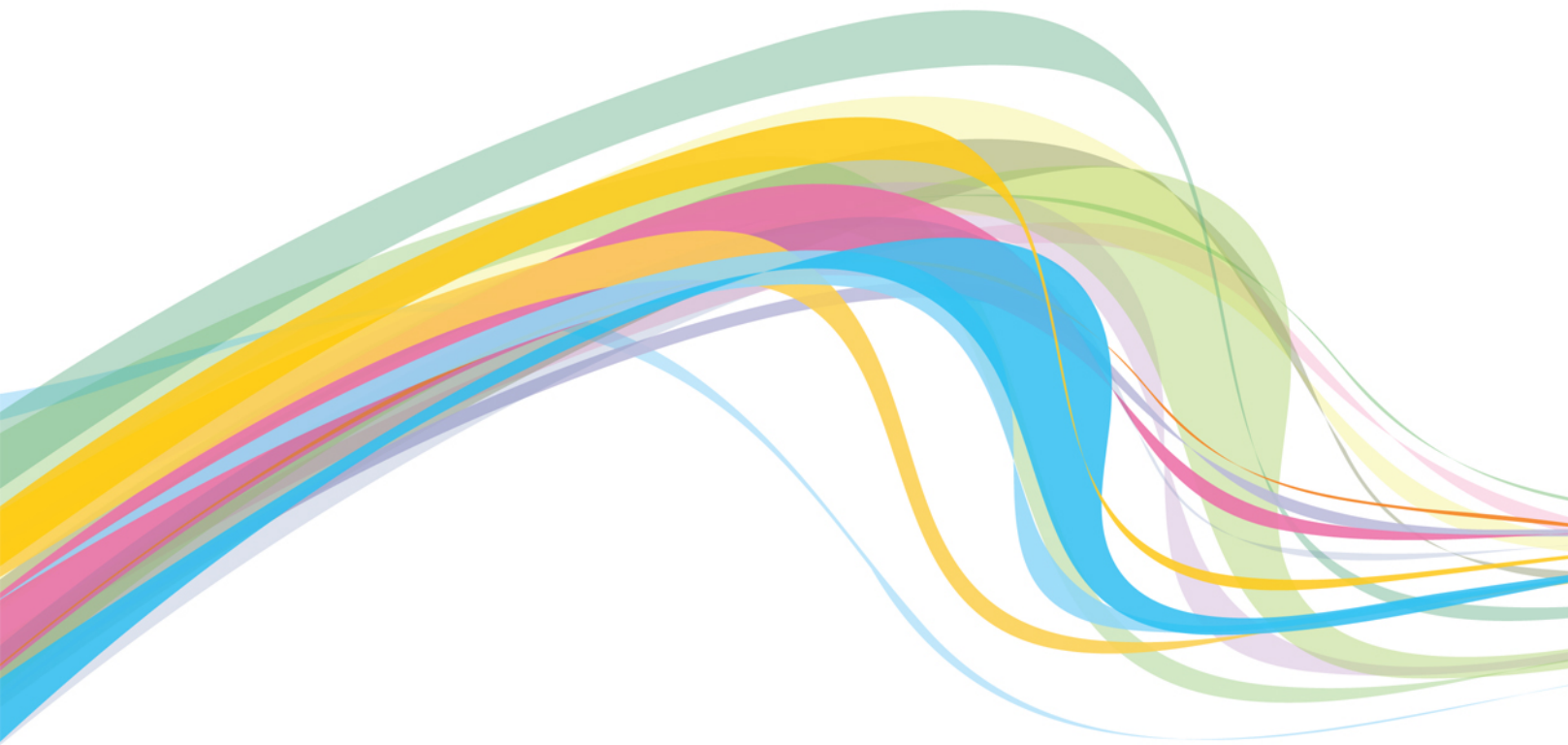
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