CHAPTER VI

REVIEW OF PERFORMANCE OF STATUTORY AND AUTONOMOUS BODIES

6.1.1 Controller of Certifying Authorities (CCA)

The Controller of Certifying Authorities (CCA) continues to promote the growth of e-commerce and e-governance through the use of digital signatures. The number of digital signature certificates issued continues to grow and is expected to increase significantly with the launch of e-governance programmes. Initiatives have been taken in this respect through coordinated interactions between the e-governance application service providers and the Certifying Authorities.

Targets and Achievements during the year 2013-14 (up to 31.03.2014)

Targets	Achievements
Implementation of the provisions of the IT Act in respect of licensing of Certifying Authorities and exercising supervision over the activities of Certifying Authorities.	Licence has been renewed for eMudhra & NIC to operate as Certifying Authority. Necessary approvals for changes in the Licensing conditions, Examination of Audit Reports, changes to CPS and addressing CA and User concerns during the year were also carried out.
Continuation of the operations at the primary site in New Delhi for the Root Certifying Authority of India (RCAI), CCA's web site and the Disaster Recovery site for the RCAI at CDAC Bangalore.	Operations of RCAI, website and DR site were carried out successfully. CCA & CAs have created a New Root RCAI Certificate and CA Certificates respectively with 10 years validity.
Upgrading the Technical Infrastructure at RCAI primary site and DR site.	Tenders were floated for procurement of the Hardware Security Module (HSM) for both primary and DR Site. The technical evaluation and financial evaluation of the tender is complete and the process of key migration has been carried out for the already existing RCAI Certificates Process has been initiated for migration of keys for the newly generated RCAI Certificates with longer validity period.

	The RCAI Software is also being upgraded. Evaluation has been completed. Purchase Order has been issued for upgrading at both primary and DR Site. CDAC Bangalore is in the process of up gradation of the technical infrastructure at RCAI DR Site.
Promoting the integration of digital signatures with applications with special focus on E-Governance applications.	E-Governance applications are facilitated. Moreover, admissibility of XML Signature Standard and Cryptographic Message Syntax (CMS) standards is being considered by Committee constituted for framing End-entity Signature Rules.
Awareness generation programmes in PKI.	A series of newspaper advertisements for creating awareness about Digital Signatures and associated dos-and-donts have been published. Awareness Programmes were carried out in association with FICCI and CDAC in states of Punjab, Maharashtra, Gujarat and in the Union Territories of Delhi and Chandigarh.
Operationalisation of Online Certificate Validation Service (OCVS).	Implementation model for Online Certificate Validation Service (OCVS) has been firmed up.
CCA's Root Certificate to be incorporated in Mozilla Firefox Browser and Adobe Trust List.	Discussions with Certifying Authorities are continuing in respect of pre-installation of CCA's Root Certificate in Mozilla Firefox Browser. The CPS of NIC CA and IDRBT were amended. Interactions were carried out with Adobe for inclusion of Root Certificate and the Agreement to be signed with Adobe has been submitted to MEA for vetting.
Number of Digital Signature Certificates issued by licensed Certifying Authorities was estimated to grow to 65 lakhs.	The number of Digital Signature Certificates issued by licensed Certifying Authorities has grown to more than 70 lakhs.

6.1.2 Cyber Appellate Tribunal (CAT)

In accordance with the provision contained under Section 48(1) of the IT Act 2000, the Cyber Regulations Appellate Tribunal (CRAT) has been established in October, 2006. As per the IT Act, any person aggrieved by an order made by the Controller of Certifying Authorities or by an Adjudicating Officer under the Act can prefer an appeal before the Cyber Appellate Tribunal (CAT). This Tribunal is headed by a Chairperson who is appointed by the Central Government by notification as provided under Section 49 of the IT Act 2000.

Before the amendment of the IT Act in the year 2009, the Tribunal was known as CRAT and the Chairperson was known as the Presiding Officer. Provision has been made in the amended Act for the Tribunal to comprise a Chairperson and such number of other members as the Central Government may notify/appoint. The name of CRAT has also been changed to CAT.

At present, the CAT is functioning at Jeevan Bharti (LIC) Building, New Delhi. The former Chairperson demitted the charge on 30.06.2011. Two posts: Member (Judicial) and Member (Technical) were created and against these two posts, currently, Member (Technical) is functioning as Head of the department.

During the year 2013, nine fresh appeals have been filed by the parties which are awaiting admission hearing. In addition to 14 appeals from the previous years, the same will be disposed of on the joining of the Chairperson, CAT who is the Competent Authority for the disposal of the appeals.

6.1.3 Semiconductor Integrated Circuits Layout Design Registry (SICLDR)

To protect Semiconductor Integrated Circuits Layout-Designs and for matters connected therewith or incidental thereto, Government of India through Department of Electronics & Information Technology, Ministry of Communications & Information Technology, enacted "Semiconductor Integrated Circuits Layout-Design Act 2000 (no. 37 of 2000)". DeitY has established the Semiconductor Integration Circuits Layout Design Registry (SICLDR) for receiving applications and granting registration to the original layout designs of integrated circuits. The Registry has jurisdiction all over India.

Targets and Achievements during the year 2013-14 (Up to 31.03.2014)

Targets	Achievements
Bringing into force relevant Sections of Semiconductor Integrated Circuits Layout-Design Act	Section 93 & 94 of the Semiconductor Integrated Circuits Layout Design (SICLD) Act 2000 brought-into force. Following Gazette notification are published: (i) Bringing-into-force section 93 & 94 of the SICLD Act 2000. (ii) Declaration of the list of Convention Countries under section 93 of the Act
Monitoring Ongoing Projects	Following specialized manpower were trained under DeitY supported project : (i) 120 under M.Sc. (IC layout-design course) (ii) 11 under P.G Diploma Course in IC Layout-Design.
Pursuing Matters of Appellate Board & Registry	1. Following posts created: (i) Registrar, SICLD Registry (ii)Technical Member, Layout Design Appellate Board 2. The Draft Rules - "Conditions of Service Rules" of Appellate Board and officers and staff of Semiconductor Integrated Circuits Layout-Design Registry prepared. 3. Initiated actions for transitional arrangement of Layout Design Appellate Board under Section 55 of SICLD Act 2000 in consultation with D/o Industrial Promotion and Policy and M/o Law and Justice.
Diffusion of Semiconductor IC Layout-Design IPR Matters	(i) Conducted a workshop at Pune University for the users, academia and the industry focussing on the layout design related issues (ii) Disseminated information using posters and pamphlets on the Semiconductor IC Layout-Design Act and the SICLD Registry in two conferences viz. "Indo-European Conference on Patents for Computer Implemented

	Inventions" Deity, Delhi and "IPR Workshop" at Motilal Nehru National Institute of Technology, Allahabad. (iii) Monthly updating of SICLD website and e-Journal.
Protection of Layout Designs of Semiconductor ICs	Received one application for IC Layout Design Registration. Relevant documents are being obtained from the applicant.

6.1.4 Indian Computer Emergency Response Team (CERT-In)

CERT-In is the national nodal agency for responding to computer security incidents as and when they occur. CERT-In creates awareness on security issues through dissemination of information on its website (http://www.cert-in.org.in) and operates 24x7 Incident Response Help Desk. It provides Incident Prevention and Response services as well as Security Quality Management Services.

Targets and Achievements during the year 2013-14

Targets	Achievements
Cyber security assurance and implementation of cyber security Crisis Management Plan (CMP) in Central Govt. Ministries/Depts. as well as States/UTs	• The 5th version of Crisis Management Plan (CMP) for countering cyber attacks and cyber terrorism (March 2013 version) has been circulated to all the key Central Government Ministries/Departments and States/UTs. • Central Government Ministries /Departments and States & UTs are preparing their own sectoral CMPs for implementation. Enabling Workshops for critical sectors, States and UTs were conducted. So far, 10 implementation enabling workshops have been conducted. • Cyber Security Drill, to enable participating organizations to assess their preparedness to deal with Cyber Crisis Situation, is being conducted on periodic basis. Till date CERT-In has conducted 8 Cyber security drills of different complexities with 138 organizations covering various sectors of Indian economy i.e. Defence, Space, Atomic Energy,

	Telecommunications(ISPs), Finance, Power, Petroleum & Natural Gas, Transportation(Railways & Civil Aviation) , IT/ ITeS/ BPO sectors and Data Centres from Government/Public/Private. This drill involved layer 2 exercise (based on simulated cyber attacks) and advanced layer 3 exercise (based on Hypothetical/Hybrid Scenarios). Parallel Test bed facility has been established at IISc, Bangalore for CERT-In to provide support in conducting cyber security exercises and empanelment technical skill tests. • 43 auditors were empanelled to carry out information security audit, including the vulnerability assessment and penetration test of the networked infrastructure of government and critical sector organizations.
Continuous upgradation of CERT-In facilities and capabilities to counter growing cyber security threats.	• Operating software's for mail gateway protection and Applications Firewall have been upgraded to the latest versions. • Upgrading the Storage Area Network to the latest unified storage. • Added a state of the art virtual tape library for taking automated backups for web and mail servers. • An advanced UTM device with capabilities of cleaning the incoming and outgoing traffic has been deployed. Proposal for establishment of a national facility -National Cyber Co-ordination Centre (NCCC) - for real time cyber threat assessment and situational awareness for proactive preventive actions, is under advance stage of approval for initiation. In addition proposal has been submitted for approval for "Setting up of Botnet Cleaning Centre" and

	"Setting up of Malware Analysis centre". • Data acquisition and Mobile Forensic analysis facility for smartphones was augmented to Cyber Forensic Lab.
Enhancing the security of communications and information infrastructure in the country. Incident response, incident prevention and cyber forensic services	• Around 95552 security incidents handled. • 25577 Indian website defacements tracked. Incident Response and Advice for prevention provided to affected organisations. • 1783 open proxy servers in India were tracked and actions were taken to mitigate the same. • Around 7892544 Bot infected systems and 65 Command & Control servers were tracked in India. • 11 Security alert/ incident notes issued. • 89 Security Advisories issued. • 235 Security Vulnerability notes issued. • Security Bulletins covering various cyber security issues, intrusion trends and defence mechanisms are being published every month. • Summary of Website Defacements depicting break-up of the websites defaced, top defacers and vulnerabilities and suggestions on best practices to secure web applications and web servers are being published on monthly rests. • Participated in Asia-Pacific international incident handling drill in February 2012. • Participated in an international drill with ASEAN member countries ACID 2013 held in October 2013 focussing on Distributed Denial of Service Attacks (DDoS) and incident response. • Participated in another international security drill with Asia

	Pacific CERTs, APCERT 2014 was held in February, 2014. • CERT-In had provided hand holding support to various agencies in investigation and analysis of digital evidence seized from the computer systems and mobile phones involved in cyber crimes.
Training and capacity building	• During the year 2013-14, CERT-In has conducted 26 trainings on various specialized topics of cyber security for System/Network Administrators, Application Developers, IT Managers, Chief Information Security Officers (CISOs)/ Chief Information Officers (CIOs), and IT Security professionals. Around 878 IT professionals attended these trainings.

6.2 Societies/Autonomous Bodies

6.2.1 Society for Applied Microwave Electronics Engineering & Research (SAMEER)

SAMEER is a premier R&D institution with laboratories at Mumbai, Chennai and Kolkata and Headquarters at Mumbai, working in the hi-technology area of microwave and allied disciplines. SAMEER has a long-term strategy, which consists of building of expertise by doing core R&D and keeping abreast of latest trends and state of the art technologies. This is achieved by building up the infrastructure for making R&D and deliverables viable and meaningful in terms of technology and duration. This institution continues to be in a position of strength in handling design, development and delivery of hardware to meet stringent specifications of user agencies in its areas of expertise including High Power RF amplifiers, RF communication systems, Atmospheric Radar Instrumentation, Linear Accelerators, Thermal Engineering of electronic hardware, RF/ Microwave/ Millimeter wave subsystems and systems, Photonic devices, Microwave components/ modules and Industrial RF/ Microwave application products, design, test, measurement and consultancy services in electromagnetic Interference/ compatibility (EMI/EMC).

Targets and Achievements during the year 2013-14 (up to 31.3.2014)

Objectives/Targets	*Achievements*
Build-up expert design domains catering to the needs of latest technology.	Femto-second laser based optical device writing system integrated. 1x2 Optical power splitters in planar and three dimensional configurations realized. Monopole with top loaded disk fabricated. A novel, extremely low profile (6cm thick) VHF antenna was developed, fabricated and tested with radome for continuous operation from 30 MHz to 1000MHz. Design and simulation of S-Band Oscillator for Direct phase modulators done. Design and development of pre-driver amplifier of 1 Watt output power and driver amplifier of 6.5 Watt Output power has been completed. Design and simulation of W-band tripler and attenuator completed. Altimeter Range measurement facility established. SAR hardware has been developed and tested. Firmware for operational functionality, data acquisition and memory storage validated. Experiment with SAR hardware and offline Image Procession successfully demonstrated. Experimental setup for THz spectroscopy made. Bench top experimental lab setup has been put in place to acquire spectrograms of different samples using optical coherence tomography.
450	One 75 MHz, 300 W solid state amplifier has been developed and

	tested. 1 kW SSA at 37.8 MHz has been designed and tested. Design and Simulation of wide stop band filter using multi-slit CTSRR unit cell for micro strip transmission lines has been done. Designed and implemented Multi-layer Embedded filter for L band applications, EBG for active circuit applications and Mirrored CTSRR based Common mode suppression in micro-strip Differential lines. Electronic sub system development completed for vacuum assisted RF Dryer. Four new configurations of UWB printed Monopole Antennas have been designed developed and tested. Forward model development completed for Millimeter-wave Radiometer. Developed Ionosonde system was Installed and tested successfully at physics Department, Dibrugarh University. A 5x5 array Active Aperture has been installed at SAMEER for Wind Profiler. Single layer and multi-layers InAs/GaAs quantum dots have been successfully fabricated and characterized. Quantum dots have been characterized by PL, SEM, XRD and AFM. Growths of InGaAs/GaAs heterojunctions and Quantum Wells Characterization by High Resolution X-Ray Diffraction (HR-XRD) have been done. Susceptibility testing of sample for EMP with the calibrated set up

	for MILSTD 461E/RS105 generating a field of 50KV/m has been done. Design of LNA, Switch, Mixer, Multipliers at Ka-band and 60GHz in MMIC form using UMS MMIC design kit has been done. MMICs have been fabricated and tested. Test results are very good and match design specifications. Electronic Circuit fabrication completed for commissioning of SODAR in Assam University, Silchar. System design completed for 10 kW Microwave Tea Processing system. Receiver design for digital Ionosonde Radar has been completed. Two well attended workshops one each at Gauhati university and Tezpur University have been successfully conducted in 2013-14. The workshop in Gauhati University was on Remote-sensing techniques in the exploration of Atmosphere and Near Earth Environment while the workshop at Tezpur University was on RF & Microwave Technology.
Design and development of application specific systems as per user needs	Completed the fabrication and testing of Beam bending magnet, Stand and Gantry, Field optics, Water circulation system, Patient Support Assembly subsystems for dual energy linac system. Alignment of beam bending magnet with Linac yoke sub-assembly completed. Development of software codes for various sub-assemblies like Gantry movement, target movement, carousel, PSA etc. completed. One unit of 6 MV Medical LINAC based integrated Oncology system under Jay Vigyan Mission (Phase II) commissioned at Indore.

	Other three Medical Units would be commissioned after the User sites (Amaravati, ACTREC, Navi Mumbai and Hyderabad) are ready. A 4x4 antenna array installed at SAMEER, Mumbai. It is being characterised for active and passive impedance matching and near field radiation pattern of ST radar. VHDL coding, integration of RF and base band sub systems completed for Adaptive OFDM transceiver. Multi Leaf Collimator software tested for Dual Energy LINAC. Development of one number of transmitter and receiver has been completed for wireless data link at 60 GHz. Prototype development of W band slotted array antenna and Ka band IFF antenna completed. System design for THz generation and detection finalized. Installation of Hand Held data Logger for data acquisition, processing and messaging using GSM network completed for Mumbai regional Met centre. The complete system was tested at Mumbai RMC with 10 stations. Window UHV assembly was integrated to the first Test Prototype Gyrotron (TPG-1). Specifications for baseband sub system finalized for secured two way communication system. Metamaterial based filter has been designed and simulated.

	Five units of Millimeter wave TX/Rx have been delivered to a R&D centre and tested successfully. Assembly and testing of sub-components required for 6^{th} and 7^{th} unit are completed. Modelling and simulation of MMW transceiver has been completed. Performance analysis of two different models (RF model & SAR model) has been done for Imaging applications. Laboratory Proto type of laser absorption based sensor module was made and tested for trace gas detection of CO. Gyro chips received from a R&D centre were packaged and delivered. Development of FCS (GRSE) and FCS (MDL) has been completed; System is qualified through QAP and ATP tests. Two FCS Systems delivered. Shared Aperture Antennas has been developed. Conformal antenna mounted on aircraft. Environmental tests on QT model have been conducted. Design of Microwave system having twin source racks with variable pulse power and multimode cavity has been completed. Testing of Card level and Chain/Deck level for 7^{th} and 8^{th} Units of S band TT&C Transponders for Resource Sat- 2A has been completed. Design of the system and sub-systems completed for Ka Band Polarimetric Doppler Radar for Cloud Profiling. 5 numbers of 1680 MHz Rx Systems and new onboard Radiosonde

	Sensor Data Acquisition hardware have been made. The hardware has been tested on test flights from Chennai. The 403 MHz Receiver has also been developed and tested. Design of Wrap around conformal antenna has been completed. Starting with a frequency of 70 MHz, one transmitter chain is designed, fabricated and tested that gives 6 W of CW power at 30.5 GHz. Engineering prototype of the X-band antenna has been developed. Five numbers of antennas have been fabricated, tested and delivered to the end user. Radio Proximity Fuse Antenna (10 nos.) at Ku band have been delivered. All RF based Proximity Sensor units with Antennas have been delivered to user. S-band comparator has been designed, fabricated and its performance measured. Ka band reflector and feed horn have been designed and simulated.
To offer test, design validation services to industries	711 Test and measurement assignment completed for various Industries & National agencies through NABL accredited EMI/EMC labs.
To enhance the design knowledge of engineers in Indian industries and Universities to facilitate graduates and PG to understand the advanced topics.	42 Engineering students at M. Tech./B.Tech levels carried out their project work under the guidance of SAMEER Scientists. 8 Workshops/ conferences/ Seminars were organised. Training program in the areas of EMI/EMC, thermal design and antennas are carried out periodically.
Strengthening institutional infrastructure to support ongoing programmes - Augmentation of facilities	Construction of Residential quarters for Scientists and utility building at Navi Mumbai is under progress.

	Construction of Scientist Hostel building at SAMEER, Powai campus through HSCL has been initiated.

6.2.2 Centre for Development of Advanced Computing (C-DAC)

Centre for Development of Advanced Computing (C-DAC) is a Society of the Department of Electronics & Information Technology (DeitY), carrying out R&D in IT, Electronics and associated areas. Starting from its initial mission on building indigenous supercomputers, C-DAC has progressively grown to build an eco-system and institutional framework for innovation, technology development, skills development, delivery plans, collaboration, partnership and market orientation in a number of niche areas of national importance and market relevance in ICT and Electronics Through in-house research, technology and product development efforts in collaboration with Academia, Research Labs and Industry in India or abroad, it endeavors to identify promising ideas nurtured building of ideas and competencies convert many of them into practical tools, technologies, products and services to meet the needs of: SMEs and other industrial players in the country; intermediate players; and end-users in Science and Engineering, manufacturing & service sectors, government, health, development and strategic sectors.

Targets and Achievements during the year 2013-14 (up to 31.03.2014)

Sr. No	Projected Outcomes	Achievements
1.	R&D towards Architecture of Petascale Computing	EFC Note on National Supercomputing Mission submitted to Planning Commission. PARAM System at NPSF upgraded
2.	Advance research in domains of Science and Engineering with the use of PARAM systems such as Atmospheric and Environmental Science, Material and Structural Engineering, Computational Fluid Dynamics, Geophysical, Bio-informatics	Ported several HPC applications on Param Yuva II for domains such as “Atmospheric and Environmental Science” and “Bio-informatics”.

Sr. No	Projected Outcomes	Achievements
3.	Power aware scheduling; power profile of HPC systems; Power electronics for HPC	Development of Power Aware scheduler completed. Development of Optimized Cooling, Lighting and Power Monitoring of Nodes and Self-Managing System Software is in progress.
4.	Scientific Cloud Framework Garuda 2.0 next phase of Grid project	C-DAC's free and open source based cloud stack named Meghdoot along with security tools deployed at Institute for Development and Research in Banking Technology (IDRBT), Hyderabad. Garuda Phase –II proposal prepared and submitted to DeitY.
5.	Development of Speech to Speech translation system among English and Indian languages for limited Domain	Lexicon creation and TAG Transfer Grammar creation for English to Hindi, Hindi to English, and Bangla, Punjabi, Malayalam, Language wise TTS integration in progress.
6.	Development and deployment of new emerging tools and capabilities	Data Analysis tool development for Hindi, Tamil, Telugu, Urdu, Punjabi in progress
7.	Localization of domain names in Indian languages	Enabled ".in" registry for ".भारत "IDN country code top level domain (ccTLD) for 8 languages viz. Hindi, Marathi, Sindhi, Nepali, Maithili, Bodo, Dogri, and Konkani
8.	Deployable version of English to Indian Language System	In Progress
9.	Development of technologies and solutions for advanced radio and network communications to address the military and	Architecture design and simulation completed

Sr. No	Projected Outcomes	Achievements
	civilian communications	
10.	Technologies for electronic Nose-Tongue-Vision for various agricultural commodities	ToT was done for Integrated Electronic Nose and Vision System (ENOVISION) and Electronic Tongue (E-Tongue) for tea, to two technology partners E-NOSE (Electronic Nose) for Obnoxious Gaseous detection was deployed at two different locations
11.	Red Light Violation detection system	Completed
12.	Development of Self Healing Grid components	Activity not initiated
13.	Design and development of Indigenous CAS system	Activity not initiated
14.	Development of applications, tools and middleware, for service delivery gateway through mobile computing to reach masses	Development of m-Transport, m-Authentication, Mobile PKI, m-Health, Augmented Reality, Language enablement (Hindi) and m-Sahayak (Agri) solutions in progress
15.	Adaptive learning support for autistic children	E-Sadhya, an adaptable and accessible e-learning framework tool deployed in National Institute for Empowerment of Persons with Multiple Disabilities, Chennai

Sr. No	Projected Outcomes	Achievements
16.	Decision support system for drug and pathology management	Activity not initiated
17.	SCADA Security solutions to be developed and pilot tested in Power GRID in southern region	In Progress
18.	Fingerprint matching solution for UIDAI usage	In Progress
19.	Solution to address common security concerns in cloud	Development of solutions for Detection/ Mitigation of Distributed Denial of Service Attacks (HTML-DoS and XML-DoS) targeted on cloud based services in progress
20.	Development of simulation facilities for security, solutions for phishing and routing problem, etc.	Testbed completed
21.	Integrates the multitude of tools involved in Security Management	Implementation completed; Integration and testing in progress
22.	Body Area Networks and application in healthcare; Wireless sensor network platform and applications	Development of algorithms and strategies for WSN for Agriculture, Transportation and Healthcare in progress

Sr. No	Projected Outcomes	Achievements
23.	Rollout of Anurup adaptive instruction system for distance learning courses	Online examination system developed and used for C-DAC's Common Admission Test exam.
24.	Online labs for schools	Phase-I CD prepared with 15 experiments in HTML5. 7 Math Lab Activity for class 9th are in progress
25.	Develop AR book and AR board application	In Progress

6.2.3 National Institute of Electronics and Information Technology (NIELIT)

National Institute of Electronics and Information Technology (NIELIT), an Autonomous Scientific Society under the administrative control of Department of Electronics and Information Technology, Ministry of Communications and Information Technology, Govt. of India was set up to carry out Human Resource Development and related activities in the area of Information & Communication Technology. The Society has its presence in 30 locations through-out the country at Aurangabad, Aizawl, Ajmer, Agartala, Calicut, Chandigarh, Chennai, Delhi, Gorakhpur, Gangtok, Guwahati/ Tezpur, Imphal, Itanagar, Kolkata, Kohima, Patna, Srinagar/ Jammu, Shillong, Jorhat, Silchar, Shimla, Churachandpur, Senapati, Lunglei, Chuchuyimlang, Srikakulam, Leh & Lucknow with Headquarters at New Delhi.

The institute is engaged both in the formal & Non formal Education in the area of IECT besides development of Industry oriented quality education and training in the state-of-the-art areas, establish standards to be the country's premier institution for Examination and Certification in the field of IECT. It is also a National Examination Body, which accredits institutes/organizations for conducting courses particularly in the non-formal sector of IT Education & Training. Under the IT Mass Literacy Programme, Institute is offering two schemes namely, Course on Computer Concepts (CCC) & Basic Computer Course (BCC).

The Centres are also undertaking government sponsored projects in the field of ICT & related activities. The Centres are also embarking upon training programme to develop entrepreneurs and provide ICT based services to users. The infrastructure, resources

and expertise available with the NIELIT Centres are being utilized for the implementation of various e-Governance capacity building projects.

Targets and Achievements during the year 2013 - 14

Sl. No.	Targets	Achievements during the year 2013-14)
I.	**Training in NIELIT Centres**	
	(A) To Conduct Training for Long Term formal Courses (M. Tech, MCA, BCA etc. - **2000 candidates**	2,225
	(B) To conduct training for Long Term non-formal Courses (O/A/B/C) Level in IT , O/A Level in Bio-informatics, O/A Level in Hardware Courses, O/A Level in Multimedia etc.**– 10,000 candidates**	10,256
	(C) To Conduct Training for Short Term Courses with duration of less then one year other then BCC/CCC**- 15,000 candidate**	65,649
II.	**National level Certificate Scheme (O/A/B/C) Level Scheme** (A) Grant /Renewal of Accreditation for running courses with duration of one year and above**– 65 institutes**	71
	(B) To conduct training for long term non-formal course (O/A/B/C) Levels in IT by Accreditation Institutes**– 40,560**	38,342
	(C) Number of module candidates appearing in NIELIT O,A,B,C Level Examination in IT (One candidate appearing for two modules is conducted as 2 module candidate) **– 1,15.500 candidates**	1,29,266
III	**IT Literacy Programme**	
	(A) To conduct training for courses on Computer Concepts (CCC)**– 1,20,000 candidates**	8,39,581
	(B) To conduct training for Basic Computer Course (BCC) **– 80,000 candidates**	2,10,995

6.2.4 Promotion of IT/ITeS Industry (Formerly STPI)

Software Technology Parks of India has been set up as an Autonomous Society of the Department with an objective to implement STP/EHTP Scheme, set-up and manage infrastructure facilities and provide other services like technology assessment and professional training. The main services rendered by STPI for the software exporting community have been statutory services, data communications services and incubation facilities. STPI has also played a developmental role in the promotion of software exports with a special focus on SMEs and start up units. The STP scheme has been widely successful and the exports made by STP units have grown manifold over the years. Today the exports by STPI registered units shares a major part of the total software exports from the country. STPI has also been providing incubation facilities for the software exporters, specifically to the SMEs and start up units. The incubation facilities include ready to use built up space with plug and play facilities and other backup resources such as power, DG set, internet enabled workstations etc., which have been very useful for the start-up units and SMEs.

Targets and Achievements during the year 2013-14:

Targets	Achievements
To promote exports of electronics & IT This program is for promotion of exports and provides facility to Indian Small and Medium Organizations for participations in export promotion events in the software and electronics sectors.	STPI is implementing the Software Technology Parks (STP) scheme for promoting software & information technology service companies and Electronic Hardware Technology Park Scheme (EHTP) for Electronic hardware industry. The above schemes have been widely successful and the exports made by the units registered under the above schemes have grown manifold over the years. As on 31.03.2014, more than 3,500 units were operating under STP scheme and more than 100 units were operating under EHTP scheme. During the FY 2013-14, export from STP units was Rs. 2,53,784 Cr.(estimated) and from EHTP units was Rs.18,411 Cr. (estimated).

6.2.5 Centre for Materials for Electronics Technology (C-MET)

Centre for Materials for Electronics Technology (C-MET) has been set up as a Society under Department of Electronics and Information Technology as a unique concept for development of viable technologies mainly in the area of electronics materials. C-

MET is operating with its laboratories with well carved out programmes at Pune, Hyderabad and Thrissur. The objectives of C-MET are to establish the technology up to pilot scale for a range of electronic materials transfer the same to industry for commercialization; to establish relevant characterization facilities; to undertake applied research activities in the area of its operation; to establish national data base on electronics materials.

Targets and Achievements during the year 2013-14 (up to 31.03.2014)

Area/Projects & Physical Targets	*Achievements*
Integrated Electronics Packaging: Process for Integrated Glass-Ceramic Packaging **Targets:** • Development of microwave circuit boards • Development of LTCC based cryocooler • Development of materials for integrated LTCC	• Developed Mid-k dielectric materials with 24-32 dielectric constant . • Fabricated cryocooler devices showed temperature drop in the range of 30-33K. • Fine tuned silver paste composition used in fabrication of LTCC packages. • Repeatability study conducted on RuO_2 piezoresistor compositions on steel and alumina substrate. • Photoimageable photo conductor paste prepared using Cu doped CdS showed better photoconducting performance. • Optimized SMECH process parameters for 8"x8" size microwave substrates samples.
• **Nanomaterials and devices:** Generation of Nano-powders,Nanocomposite & Quantum dots of metals/semiconductors/ for Electronics Technology and allied applications **Targets:** • Preparation of quantum dots • End user trials for nano-size metal/ metal oxides particles • Q-Semiconductor -Glass-Nanocomposites	• Developed Q semiconductor-glass nano composites at 4Kg scale with CdSe doping to achieve 715nm cutoff . • AERB test result for A4 size sheets coated with $BaBi_2S_3$ powder & SBR latex shows targeted 0.25 mm Pb equivalence. • Synthesized Nano-aluminum powder by variation of process parameters.
Ultra high purity materials: Process technology /Pilot plant scale production of ultrapure metals **Targets:** • Wide band gap (WBG) SiC single crystals. • High purity Ga	• 6H & 4H SiC single crystals have been grown successfully. • Prepared 5.5 kg Hafnium sponge. • Carried out feasibility trials on germanium homogenization/ crystallization. • Up-scaling trials were conducted on ultra high purity gallium for yield improvement.

E-Waste management : Process for metal recovery from e-waste **Targe**ts: • Environmentally sound methods for recovery of metals	• E-waste calciner was designed, fabricated and erected at e-parisara, Bangalore. The pyrolyser is working satisfactorily for normal PCB's.
NABL accredited facilities: **Targe**ts: • Services to industrial sector	• Developed analytical testing facilities and SoPS. Samples tested from nearly 40 industries for RoHS certification. Conducted four industry meets at various places to establish the sustainability of market.
Materials for Renewable Energy: Process for renewable energy material. **Targe**ts: • Nanocomposites for solar cells • Nanostructured materials as a Photocatalyst for hydrogen generation • Fabrication of supercapacitors	• Synthesized $ZnIn_2S_4$ and $CdIn_2S_4$ for Hydrogen Sulphide splitting trials in presence of natural sunlight. • Prepared the high pure salts viz., tellurium oxide, cadmium sulphate, cadmium chloride, etc. for fabricating CdS/CdTe solar cells. • Fabricated aerocapacitors of capacitance ~25F showed good electrical performances. • Prepared Titania nanorods for the DSSC photoanodes . • Fabricated a graphene supercapacitor having specific capacitance of 60-80F and 1 to 6 Ohm ESR .
Sensors and Actuators: Process/technology for sensors and actuators. **Targets:** • Development of piezoceramic composition • Process for actuators of required specifications	• Prepared 10 x 10 cm of transparent PVDF film for acoustic actuators and sensor. • Fabricated ML stack actuator exhibiting expected properties sent to LEOS, ISRO for evaluation**.** • Reproducibility of characteristics of PZT rings for the underwater SONAR transducers applications have been established at system level (at NPOL, Cochin). • 10 Kgs of piezoceramic composition equivalent to PZT 5J have been prepared as per CEL, Sahibabad specification.

6.2.6 Education & Research Network (ERNET) India

Education & Research Network (ERNET), India is an autonomous Scientific Society under the administrative control of the Department of Electronics & Information Technology. ERNET India has been serving institutions in various sectors namely, health, agriculture, higher education, schools and science & technology and thus, understands the needs of these knowledge institutions. ERNET India is helping to create a truly global research community where advanced resources and new learning can be effectively shared by connecting the research network in Europe with ERNET. ERNET network is a judicial mix of terrestrial and satellite based wide area network. ERNET Network Supports IPv4 and IPv6 Internet protocol in dual stack, unicast and multicast. IPv6 routing protocol OSPFv3, end-to-end Ethernet services, QoS, Video Conferencing, authentication and authorization have also been implemented on ERNET network.

Targets and Achievement during the year 2013-14 (up to 31.03.2014)

Targets	Achievements
R&D initiatives	Mobile IPv6 project completed successfully.
Setting up of e-Learning ICT Centers in 204 schools of Srikakulam, District of Andhra Pradesh	The e-Learning ICT centers with internet connectivity will be established in 204 schools of tribal areas of Srikakulam District of AP. The feasibility to setup e-learning ICT centers in 204 schools is completed by ERNENT India. The ERNET India had established the ICT Lab in 01 schools and project was successfully launched by Honorable Minister of State for Communications & Information Technology on 27.02.2014 at Srikakulam district. 400 teachers will be trained in ICT during 2014-15.

Setting up of ICT Centres in 250 schools in rural areas of Ajmer and Jaipur District of Rajasthan.	Established ICT Centers in 250 schools of Ajmer and Jaipur in 2011 with internet and E-learning facility. The centers were in operation and maintenance since then. A data Center/NoC is also established for delivery of e-learning facilities and its monitoring. Under the project ICT training to 750 ICT In-charge & 25 Nodal officers had been provisioned. The training for 250 ICT In-charges was completed in May 2012. The training for 376 In-charges is completed by April, 2014 and for remaining 124 ICT In-charge & 25 nodal officers is in progress, it would be completed by 10 May 2014. The duration of project of 03 year is completed; hence it is in process of Handover to Education Department, Rajasthan Government. 235 schools have been handover to respective Head Masters of schools and complete project is expected to be handed over in May 2014 for its future sustenance and maintenance.
Setting up of Digital Archival facility for Outcomes of the various Language Technology projects along with dependencies	• Secure Web based portal has been designed and developed for archiving, storing, managing, modifying and retrieving source codes of the linguistic projects as per the user rights. • All the files of the 7 Linguistic projects received from TDIL, DeitY, has been archived • This web portal can be accessed through www.bhartiyabhasha.res.in and www.tdilsankalan.res.in. • All documents are uploaded after authentication through Digital Signatures. • Data is being archived in encrypted form. Metadata is in database • Besides network level and application level security, various security measures like using of Captcha, input validation etc has been done • Automatic Version control at folder and object level has been done • Policy and System Flow for downloading and uploading of source codes has been framed

Connectivity to the schools under NVS and KVs	VSAT connectivity to 24 schools of Kendriya Vidyalaya Sangathan and 36 schools of Navodaya Vidyalaya Samiti is operational .
VSAT Connectivity with Internet/Intranet access & IT infrastructure at 200 KVKs of ICAR	• Provided access to Internet related applications on a 24x7 basis. • Provided voice calls (VOIP) facility between KVKs/ZPDs/Hub. • Provided access to video channel broadcast and webcast on 24 hours basis from Hub through a web portal. • KVKs/ZPDs developed as information Hub equipped with a Server, five desktop PCs, LAN, scanner, printer, etc. for storing and disseminating information on agriculture and also providing online and offline guidance to the farmers.
Setting up of Campus Network & IT Infrastructure at NIFTEM, Haryana	An MoU has been signed between NIFTEM & ERNET India for setting up the Network and other IT Infrastructure at NIFTEM campus. The initial site survey has already been done with Time schedule for the project & submitted. NIFTEM has provided partial advance funds.
eduroam – the free global wi-fi services for education and research in India	Already more than 3000 users from India and 1000 International visitors to India have benefited from it.

6.2.7 Electronics and Computer Software Export Promotion Council

Electronics and Computer Software Export Promotion Council (ESC) is mandated to promote India's exports of Electronics, Telecom, Computer Software and IT Enabled Services. ESC offers a varied set of services to its members for accelerating exports.

Some of the services of ESC are as follows:

- Facilitates participation in Global Trade Shows / Expositions and Conferences.
- Undertakes Market Research / Studies and publicity Campaigns in overseas markets.

- ESC facilitates business interface between Indian and foreign companies through Buyers – Seller Meets, and locates new business partners for Indian electronics, computer software and IT companies.
- For facilitating foreign trade, ESC provides on-line facility for Data Search.

During the period April 2013 to March 2014, export of electronics is estimated to have reached US$ 7664 million and software export is estimated to have reached to a level of US$ 84 billion.

Targets and Achievements during the year 2013-14:

Target	Achievements
INDIA SHOW :	ESC organised INDIA SHOW for the third time, the 14th edition of INDIASOFT series at Mumbai during 26 - 27 November, 2013. INDIASOFT is an international IT exhibition and conference organized by ESC annually. 170 Indian participants and 300 foreign delegates from 60 countries
Participation of Indian companies in Global Expositions under ESC's banner	The Council has since successfully organized participation of Indian Companies in 5 major international events abroad. They are:- 1. ICT EXPO, 13-16 April, 2013, Hong Kong. (30 ICT companies participated) 2. JAPAN IT WEEK, 8-10 May 2013 (14 ICT companies participated) 3. CEBIT AUSTRALIA, 28-30 May 2013 (27 ICT companies participated) 4. INDIAN TRADE SHOW, 3-5 September 2013, Dubai (10 ICT companies participated) 5. GITEX DUBAI, 20-24 October 2013 (37 Electronics and ICT companies participated)

Buyer Seller Meets Abroad	• ESC's BUSINESS NETWORKING MEETS IN BELARUS & ARMENIA 9-12 December 2013 (10 Electronics and ICT companies participated) • ESC's BUSINESS NETWORKING MEETS IN MYANMAR 27-28 February, 2014 (10 Electronics and ICT companies participated) • ESC's BUSINESS NETWORKING MEETS IN SOUTH AFRICA 10-11 March, 2014 (14 Electronics and ICT companies participated) • ESC's BUSINESS NETWORKING MEETS IN CHILE 27th March, 2014 (11 Electronics and ICT companies participated)
Incoming delegations	• Interactive meeting with the visiting US delegation from Indianapolis, 18th APRIL 2013, NEW DELHI
Seminars	ICT EXPORT OPPORTUNITIES SEMINAR ✓ MUMBAI- 15th May, 2013 ✓ JAIPUR, 22nd MAY, 2013 ✓ COIMBATORE, 6th JUNE, 2013 ✓ SRINAGAR, 12th October 2013 • ESC LAC Ambassador's Meet- New Delhi- 12th August, 2013 • ESC AFRICA Ambassador's Meet- New Delhi- 29th August, 2013 • Indo - Japan- IT Trade Cooperation - Chennai- 31st March, 2014