Chapter – VI

6.0 REVIEW OF PERFORMANCE OF STATUTORY AND AUTONOMOUS BODIES

6.1 Statutory Organization:

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 through coordinated interactions between the e-governance application service providers and the Certifying Authorities.

Target & Achievements during the year 2006-07

Target	Achievement
1. The provisions of the IT Act will continue to be implemented in respect of licensing of Certifying Authorities and exercising supervision over the activities of Certifying Authorities.	**1.** Examination of Audit Reports changes to CPS and addressing CA & user concerns done during the year.
2. Operations will be continued at the primary site in New Delhi for the root Certifying Authority of India (RCAI) and the National Repository of Digital Signature Certificates (NRDC) and at the Disaster Recovery site for the RCAI at C-DAC Bangalore.	**2.** RCAI & NRDC operations carried out throughout the year for providing a service & trustworthy PKI in the country.
3. Interaction and coordination with user agencies will be given special attention, for digital signatures with their applications with special focus on E-Governance applications.	**3.** Interaction & Coordination primarily carried out with Ministry of Company Affairs & Income Tax Department.
4. Enhance activities in the Cyber Forensics Laboratory to include Network Forensics.	**4.** Could not be done due to lack of manpower.

6.1.2 Cyber Regulatory Appellate Tribunal (CRAT)

Government of India enacted the Information Technology Act, 2000. Section 48 (1) of this Act provides for establishment of one Appellate Tribunal to be known as Cyber Regulation Appellate Tribunal (CRAT). Any person aggrieved by an order made by Controller of Certifying Authorities or by an Adjudicating officer under the IT Act may prefer an appeal before the Cyber Appellate Tribunal having jurisdiction in the matter. This Tribunal is to be headed by a Presiding Officer who is appointed by the Central Government by Notification as provided in Section 49 of the IT Act, 2000.

The Tribunal has started functioning recently under a Presiding Officer who is a retired Judge of the High Court of Delhi.

6.2 SOCIETY/AUTONOMOUS BODIES:

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

SAMEER is a society of the Department of Information Technology with a broad mandate to undertake R&D work in the areas of RF/Microwave Electronics, Electromagnetic Technology and its related areas.

At present SAMEER has three Centres – one each at Mumbai, Chennai and Kolkata specializing in the areas of RF & Microwaves, Communication, EMI/EMC, Antenna & Millimeterwave technology respectively. Since its inception, SAMEER has focused its activities in various areas of microwave engineering and electromagnetic technology and its each center is having specific objective in a particular field. SAMEER has already been working in industry oriented developmental activities on microwave and electromagnetic technology in the light of the globalization policy of the Government of India.

Scheme Name	Objective/ Outcome	Outlay	Quantifiable Deliverables	Processes/ Timelines	Remarks/ Risk	Status as on 31.03.2006
R&D PROGRAMMES						
SAMEER	R&D in Microwave Engineering and Electromagnetic Technology, Radar, RF Communication, High Voltage Electronics and Electromagnetic interference	32.00	1. Delivering of prototype units of Active Radar Seeker for Air Defence Programme	Development and fabrication October 2005	System integration involving other partner agencies	Integrated testing completed
			2. Commissioning of integrated Linac oncology system at Wardha	Development, fabrication and installation September 2005	AERB approval to be obtained	Fine control of field optics achieved. Radiation testing on JV2 started

Scheme Name	Objective / Outcome	Outlay	Quantifiable Deliverables	Processes / Timelines	Remarks / Risk	Status as on 31.03.2006
			3. TOT to industry of integrated radio and line modem units	Discussion with potential partners December 2005	Need for manpower for TOT documentation and follow up	a)Acceptance testing completed and items delivered b)Simulation completed. FPGA chips indented c)ATP completed & items delivered
			4. Installation of Doppler Sodar for ADE, Bangalore	Development and fabrication- August 2005		Completed. System in use
			5. Commissioning of Solid State amplifier for Radio Ion Beam programme of VECC, Kolkata	Development and fabrication - Dec 2005		System integration is in progress
			6. Pseudolite system for centre for airborne systems	Development and fabrication - March 2006		Integration of RF front end with base band section has been completed. Test and evaluation also completed.
			7. Two units of RACON to DGLL.	Development and fabrication August 2005	Evaluation by DGLL Team in Jan./Feb.06	Activity completed

Outcome Budget 2006-07 - Status of implementation / progress during the first Nine months

Name of Scheme/ Programme	Objective/ Outcome	Outlay 2006-07 (Rs. in crore)			Quantifiable Deliverables/Physical Outputs	Projected Outcomes	Processes/ Time Basis	Status as on 31.12.2006
		Non-Plan	Plan Budget	Comp lEBR				
SAMEER	R&D in Microwave Engineering and Electromagnetic Technology, Radar, RF Communication, High Voltage Electronics and Electromagnetic interference	3.00	22.00	13.00	Digital Signal Processing Infrastructure - A state of art DSP lab catering to current technologies like FPGA/DSP will be set up	The infrastructure will be utilized for various activities undertaken as signal processing is one the key areas of Radar & communication applications.	March 2007	Activity completed The infrastructure created for various activities undertaken as signal processing is one of the key areas of Radar and Communication applications
					Multi-ridge wave guide horn Antenna - A wide band multi octave horn antenna will be designed	This antenna will be used for characterization of all antennas for various applications.	March 2007	Triple pair ridged coaxial to waveguide adaptor and horn antenna adaptor were designed, fabricated and measured for VSWR bandwidth of 8.22:1. VSWR maximum of 2.3 was obtained over band (1.8–14.8 GHz). Efforts to extend the band to 18 GHz are in progress

					Differential phase shift Circulators - A high power four port S-band ferrite circulator capable of handling 6 MW pulse power and 5 KW average power will be delivered.	Linac for medical & radiography will use indigenously developed circulator replacing imported one.	Dec 2006	Integrated & tested for high power and medical linacs (3 MW Peak & 3 KW average power).
					High power Amplifier - A 16 KW pulse transmitter will be developed with 10% duty cycle.	The transmitter will be used in the new wind profiler for meteorological applications	March 2007	Assembly & fabrication in progress Testing of driver stage & solid state power amplifier completed. High power amplifier testing in progress
					X-band Klystron Amplifier source for VECC, Kolkata - The system will be designed and fabricated.	This indigenization effort will make country self sufficient in the area of particle research.	March 2007	Paper design completed. Overall subsystems identified. Klystron & DRO awaited from VECC. Wiring and integration will be taken up.

					Technical Assistance to L& T for C& S band Transmitter - The high power transmitter will be developed	The system with advanced features will be available for tracking of satellites.	Dec 2007	Testing of the Control and interlocks using FPGA and PLC based instrumentation is in progress. The hard tube modulator has been tested on dummy load for 35 KV/50A pulsed conditions. Integration of prototype C-band transmitter system is in progress
					Jai-Vigyan Medical linac machine - The second machine will be installed and commissioned at Cancer Institute Adyar Chennai	With operation of this machine 10,000 patient exposures will be possible annually	Sept. 2006	QA tests in progress. The machine will be installed at Cancer Institute, Adyar Chennai by March 2007
					Design of system and software for collection of EM signature for digital equipment - Design and development of system and software for the collection of Electromagnetic signature for various digital equipments	A data base containing EM signature will be made available to system analysis group of DRDO, RAW, Forensic Lab	Dec. 2006	Successfully demonstrated and Activity completed

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 Information Technology (DIT), 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, delivery plans, collaboration, partnership and market orientation in a number of niche areas of national importance and market relevance in ICT and Electronics. 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.

The major activities carried out by C-DAC in these areas are:

i) High Performance Computing;
ii) Grid Computing;
iii) Multilingual Computing;
iv) VLSI & Embedded Systems, Real Time Systems and Professional Electronics;
v) Software Technologies;
vi) Cyber Security;
vii) Health Informatics and
viii) Education and Training

Scheme Name	Objective/Out come	Outlay	Quantifiable Deliverables	Processes/ Timelines	Remarks/ Risks	Status as on 31.03.2006
C-DAC	**High Performance and Grid Computing** • Strategic initiative to prevent India against black mailing by	152.00	• Completion of PoC Garuda phase • 5 TeraFlop system • 10 Gbps interconnect • Grid-enabled applications in areas of Bioinformatics and Disaster Management	• Nov 2005 – 1st set of grid nodes • Mar 2006 – complete PoC grid infrastructure • 5 TF system by Dec 2005		• Design, study of 10Gbps interconnect has been completed • Deployment of communication fabric initiated • First set of 4 nodes commissioned • Prototype model for the Genom Grid for Smith Waterman algorithm has been successfully tested

	advanced nations in the supply of HPC systems. • Facilitate high-end research of science and engineering through use of HPC systems. • Demonstrate the impact of Grid Computing • Enable new applications, technologies and collaborations using Grid infrastructure for global competitive-ness			• 10 Gbps interconnect by Dec 2006 • Two grid-enabled applications by Nov 2005 • Additional grid-enabled applications by March 2006.		• www.garudaindia.in has been successfully updated. • Implementation and engineering of Grid tools, middleware, reconfigurable systems (RCS) for bio-informatics application completed and for cryptanalysis under progress. • Simulation of Garuda communication fabric has been completed. • Grid labs has been setup at Pune, Bangalore and Hyderabad centres of C-DAC • Linux cluster at Pune, Hyderabad & Chennai has been installed and is being tested. • Location study for 5 TF is in progress • Design & development of Bit Error Rate Tester for 10 Gbps Link Evaluation with VirtexII Pro-X devices is under progress

Outcome Budget 2006-07 - Status of implementation / progress during the first Nine months

S.No.	Objective / Outcome	Outlay 2006-07 (Rs. in crore)			Quantifiable Deliverables / Physical Outputs	Projected Outcomes	Processes / Time basis	Status as on 31.12.2006
		N-Plan	Plan Budget	Comp lEBR				
C-DAC	• High Performance Computing (HPC) & Grid Computing • Indian Multilingual Computing Software • Software Technologies • Electronics – Broadband & Wireless – Power Electronics – VLSI & Embedded Systems – Real Time Systems	3.00	64.50	100.00	**High Performance and Grid Computing** • 10 Gbps interconnect – completion of design and building • Cut-over of 5 Teraflop System • Installation and beginning use of Param Padma, 5TF System • Completion of first phase Garuda (National Grid Computing initiative) and commencement of second phase of PoC • Move to Main Garuda –	• Strategic initiative to protect India against denial of advanced and critical technologies in HPC systems. • Facilitate high-end research in science and engineering of HPC support to users. • Demonstrate impact of Grid Computing as of next generation of e-Science/Cyber infrastructure for providing new type of problem-solving	Internal review (Dec 2006) 2nd Quarter July–Sept 2006 Through out the year; Regular PRSG review (Q1-Q4 or approval) Ist Quarter Last Quarter Review by PRSG Quarterly Apr, July, Oct	Core components of system software of HPC enabled for 64 bit computing. Development tools of 64 bit CMPI completed. 10 Gbps Interconnect design in advanced stage 10 Teraflop System Design in progress PoC GARUDA test bed including the computing & networking infrastructure has been setup. BRAF: Hardware procurement is in progress and software procurement has been completed. Core competency in Grid Computing technologies

					preparation of project report for Main Garuda • Demonstration of Grid-Enabled applications **Multilingual Computing & Allied Areas** • Release of Indian language CDs • OTF for Indian languages • OCRs for Indian Languages • Multilingual Corpora	environment / collaboration tools • Build capability in emerging applications of Grid infrastructure for global competitiveness • Development of local language base for IT to enable its large-scale deployment and use by masses.	Development of tools, fonts and release - 1 language every 2 months Community participation - Progressive collection on quarterly basis	including monitoring access tools, schedulers and data grid solutions has been developed. C-DAC joins the EU India Grid Consortium to support interconnection between European and Indian grids. Study of using Tuple space for grid computing completed Prototype model using Tuple space for enhancing Distributed discovery of Grid resources completed A virtual organization has been formed using 4 nodes from C-DAC & 2 node from MIT, AU, Chennai. Sample application has been tested. Proof of concept of Semantic Resource Broker for grid is under progress Punjabi, Urdu, Kannada, Malayalam, Assamese & Marathi CDs are ready for launch Oriya and Bengali CDs are in last stage for release. Development of Cross Lingual Information Access (CLIA) system has been initiated.

					• Text to Speech Synthesis (TTS) for Indian Language • Commencement of R&D projects in OCR, machine aided translation, cross lingual information retrieval	• Development and use of content in major Indian languages and automatic content generation from one language to another to enable use of IT by masses. • New R&D initiatives in areas of speech technologies and machine-assisted translation to proliferate use of IT in the country.	1 language per quarter with acceptable quality Project formulation and approval, atleast 25% work to complete in the year.	OTF for 8 Indian languages has been completed Malayalam Language tools CD ready for release Nayana Malayalam OCR for new lipi is ready. OCR for old Malayalam Lipi under development Speech Corpora at advanced stage of completion for Malayalam, Tamil & Telugu languages. Speech corpora creation for Hindi, Marathi & Punjabi has been completed. OCR tools for Hindi and Marathi put in public domain by CD launch. Urdu spellchecker, dictionaries prototype ready and integrated in the Nashir product. Delivered LILA, Mantra for mobile and e-governance applications. Speech Corpora for Assamese, Bengali and Manipuri completed and released. Technology of Static VAR Compensator (STATCOM) transferred to three industries.

					Power/Agri/ Strategic Electronics, Real-Time/Embedded Systems and VLSI Design ➢ Designing tools and components for: • Power distribution • Power Supply Modules • Energy Meters • Remote Inspection Device ➢ Agro electronics • To built first prototype for Real Time, Online quality estimated systems for Food and Agro products and Automation of Post harvest Processing. ➢ Real-time systems, Embedded System & VLSI Design • Low voltage Embedded Real time Control for 3 Wheelers • Sensor Network • Embedded Systems for Multilingual and	To strengthen national capability in Power Electronics and associated areas To develop technologies for Real-time, high-speed Digital Controllers and Power Semiconductor devices for power quality improvement, electric traction, pollution free vehicles, automotive electronics, non-conventional energy sources, remote controlled vehicles, energy efficient power supplies and drives, and so on.	• Concurrent R & D and Deployment • Quarterly verifiable deliverable • Improvement in deployed systems and associated processes/ components – Quarterly • Development of 1st version and pilot deployment - Oct 2006 Larger deployment : Jan – Mar 2006	Power Supply module for Mirage Aircraft successfully indigenized. In-flight testing completed. Remote Inspection Device developed and handed over to BARC for deployment in Radio-active environment to detect leakage. Area Traffic Control System (ATCS) commissioned in Pune Installation of ATCS controllers with vehicle detection at 9 intersections on MI Road, Jaipur CAN Controller for automotive applications developed and deployed.

					industrial application & next generation Controllers • Hearing aids	To strengthen India's capabilities in Sensor Network and Embedded Systems		Electronic nose & vision for Tea quality assessment developed. Development of electronic tongue is in progress Three wheeler hybrid vehicle prototype under field testing. Digital Programmable Hearing Aid prototypes completed Field Trials at AIISH, Mysore for ASIC prototyping is in progress. SRUTHI programming software completed and being tested. Sub-10K PC project spec study, comparison, and evaluation is in advanced stage

					Cyber Security • Security tools and technologies for - Network Forensics -Cyber Security -Cyber Forensics • Algorithms for Stegnography • Stegnography – To continue work in respect of retrieval of information from Video • Intrusion Detection System • Cryptanalysis: Development of Algorithms and High Performance Computing Technologies	To build country's strength in cyber security to address : • Export restrictions on security products by advanced countries. • Confidence building in veiled security threat. • Creation of knowledge among people.	• Focus on deployment pilots: 1st half • More development : 2nd half • Submission for test to PRSG–Dec'06 • Prototype by Nov – 07 • Initial deployment in NIC, strategic users: 1st half 2006-07 Patent filing, deployment : 2nd half Denial of service and algorithm devp and prototyping: May-Aug'06 Demo Nov'06 Scaling up : March 2007	Detailed design for hardware tools in advanced stage Adaptive Intrusion Detection, analysis and response system product (N@G) completed & deployed at strategic user locations, NIC, ERNET & Garuda. Hand held hardware Imager tool is ready for release Courseware design for 1-year diploma course finalized. Components of framework for web services addressing security issues (authentication, authorization, privacy, trust and confidentiality) developed Algorithms and High Performance computing for cryptanalysis is in final stage.

					Open Source Software (OSS) and ICT Applications including e-Governance • OSS tools for various disciplines of C-DAC's activities such as security solutions, e-Learning solutions, e-Governance applications and HPC systems • Standards and component based service architecture for OSS tools • Content creation and search tools for Digital Library for Indian Heritage	• This would help reduce investments in software purchase by developing OSS for various disciplines and promoting their usage. • To develop and deploy e-Solutions, which promise improved transparency, speedy information dissemination, higher administrative efficiency and improved public services. • To participate in central, state and local e-Governance programmes	1st set of PoC deployment in field in 2-3 areas – Sept'06 Remaining- March 2007 1-2 scaled up version - March'07 Set up Expert Committee under NRC-FOSS - October 2006 1st version deployment - Dec 2006	NRCFOSS Portal developed BOSS- GNU/ Linux distribution (English ver) beta version ready Localisation to Tamil/Hindi completed Architecture design under progress MOU with IOSN signed. C-DAC is the IOSN South Asia Node.

					Broadband, Wireless and Internet Technologies • Development of software defined radio equipment • Enhancement of TETRA technology • Wireless protocols and communication systems and smart antennas. **Geomatics** Development and Deployment of GIS enabled solutions for • Land Records Management, • Urban Infrastructure Management • Natural Resource Management	• To be a National Centre of Excellence in Digital Broadband & Wireless Systems • To enable Leadership in R&D for technology development. It would strengthen the core competency and build up additional GIS based solutions.	1st version - March 2007 2nd version - Dec 2006 Design documentation - Sept 2006 - Nov 2006 Pilot deployed - March 2007 1st milestone as per PRSG approval - Feb 2007	Software Defined Radio is in initial Stage. Two base stations of Tetra Network for Kerala State Police using Compact Tetra Base Station are under field trials. Export of TETRA Protocol Stack Software for Mobile Stations to UK continued, to China added. Mobile handset based client / server applications over GSM network developed. Mapping of Rajasthan and Gujarat completed Mapping of Maharashtra and Goa in progress Biomass, Biodiversity and Carbon Pool and Carbon Sequestration maps of Radhanagari Wildlife Sanctuary completed.

					Health Informatics • Deployment of Telemedicine in Tamilnadu, Himachal Pradesh and other States. • HR Portal for health services in Kerala • Enhancement of features of the following products – Mercury – Senjivani – Sushrut **e-Governance and Allied ICT Applications** • Tools and products for ICT application for masses • Development of new e-Governance products, Solutions. • Deployment of already developed e-Governance solutions in additional states and Government departments.	Establishment of telemedicine networks in the country and building technical strengths in BioInformatics / Medical Informatics • To deploys e-solutions, promising transparency, speedy information dissemination, higher administrative efficiency and improved public services. • Deployment of practices and skill sets	At 10 locations in HP – Dec'06 10 locations in Tamilnadu – March '07 – Sept 2006 Version 2.0 – Sept 2006 Version 2.2 – March 2007 Deployment of solutions - 2nd half June 2006 followed by deployment At least in 6 States - March 2007	Project approved. Site visit, workshop and deployment phase initiated. Mercury Version 3.0 released. Development of web based telemedicine SW is in progress. Onconet (linking cancer centres in Kerala) completed & project report for nationwide linking of cancer centres submitted. Ayusoft, knowledge base on Ayurvedic medicine completed. Modern Medicine portal deployed at 2 Directorate and being used for making pay bill Deployment solution for Prime Minister Gram Sadak Yojana is in maintenance phase Solution for IGR Karnataka is in maintenance phase Solution for IGR Goa and Works Monitoring of MPRDC are under development Solution for Command Headquarters: System study ongoing. Solution for LMS for MIDC under deployment.

6.2.3 Department of Electronics Accredited Computer Courses (DOEACC) Society:

DOEACC Society is a society of Department of Information Technology. It has its own ten Centres and three Branch Offices with its Headquarters at New Delhi. DOEACC Society is the only professional examination body in India, which accredits institutes/organizations for conducting courses particularly in the non-formal sector of IT Education & Training, but at the same time, it is the only organization engaged in formal as well as non-formal education. It is primarily engaged in the 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.

Scheme Name	Objective/ Outcome	Outlay	Quantifiable Deliverables	Processes/ Timelines	Remarks/ Risk	Status as on 31.03.2006
DOEACC		49.76	O/A/B & C Levels (Non-Formal Sector of IT Education & Training) Half Early Examinations – 20,000 students	July 2005 & January 2006 Conduct examination & issue certificate		11014 students have qualified DOEACC O/A/B/C Level Theory Papers during July, 2005 (5608), January 2006 (5406) Exams making a total number of qualifiers as on date to 1,05,469.
			To conduct training for formal sector Long Term Courses (M.Tech, MCA, BCA, PGDCA, Diploma in EE & CS etc.) – 1,200 students	Annual / Semester wise exams	M.Tech, MCA, BCA, PGDCA courses are affiliated to respective state universities	883 students have been trained.
			To conduct training for non-formal Sector Long Term Courses (DOEACC O/A/B Level Courses, DOEACC Bio-informatics O/A Level Courses) - 1,800 students	Annual / Semester wise exams		1,968 students have been trained.
			Training for short Term Courses of duration less than one year – 11,392 students	Batch-wise exams	Tailor made to requirement of end-user	9,342 students have been trained.

Outcome Budget 2006-07 - Status of implementation / progress during the first Nine months

Name of Scheme/ Programme	Objective/ Outcome	Outlay 2006-07 (Rs. in crore)			Quantifiable Deliverables/Physical Outputs	Pro-jected Out-comes	Processes/ Time basis	Status as on 31.12.2006
		Plan	N-Plan	Comp IEBR				
DOEACC	To carry out HR Development in Information Electronics & Communications Technology (IECT). To produce quality professionals through Long Term & Short Terms Courses in the Non-Formal Sector.	1.70	12.00	49.62	• O/A/B & C Levels (Non-Formal Sector of IT Education & Training) Half Yearly Examinations. - **22,000** students are embedded to qualify at various Centres of courses during the year 2006 –. • To conduct training for Formal Sector Long Term Courses (M.Tech, MCA, BCA, PGDCA, Diploma in EE & CS etc.) – **1209** students • To conduct training for Non-Formal Sector Long Term Courses (DOEACC O/A/B Level courses, DOEACC Bioinformatics O/A Level courses – **2329** students. Hardware Courses – **640** students. • Training for Short Term courses of duration less than one year – **12,622** students.	IT Trained Professionals will be available for the industry for employment and will be contributing to the economy	July 2006 & January 2007 Conduct Examination & Issue Certificates Annual / Semester wise exams Annual / Semester wise exams Batch-wise exams	7566 students have qualified in DOEACC O/A/B/C level. Theory papers during July, 2006 Exam, making a total number of qualifiers as on date 1,11,840 1209 students are ongoing training for Long Term Courses. (M. Tech., MCA, BCA, PGDCA Diploma in EE & CS etc.) 2969 students are undergoing training for Long Term Courses (DOEACC O/A/B/C Level, DOEACC Bio-Informatics O & A Level and DOEACC Hardware O & A Level.) 7600 no. of students have been trained.

6.2.4 Software Technology Parks of India (STPI):

Software Technology Parks of India(STPI) is a Society of the Department of Information Technology with main objective for promotion of software exports from the country. The 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 are more than 95% of the total software exports from the country. STPI provides datacom services specifically to the software exports industry. Provisioning of this service has seen a gradual shift from onsite software development to offshore software development. At a time when the telecom connectivity in the country was not so good, STPI provided the necessary technical infrastructure for the software exports by installing satellite gateways for international connectivity. To overcome the last mile problem and to maximize uptime, STPI has provisioned radio connectivity for the last mile. Over the years, STPI's major revenue source has been its datacom services. STPI has one of the largest bases of satellite gateways. STPI has set up 47 centres across the country**.**

Apart from the statutory and datacom services, STPI has 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. Short gestation periods and minimal investments in terms of capital have encouraged the software exporters to start exporting operations.

Scheme / Name	Objective / Outcome	Outlay	Quantifiable Deliverables	Processes / Timelines	Remarks / Risk	Status as on 31.03.2006
STPI & EHTP	Setting up of new STPI Centres Incuba-tion facility at Guwahati	5.90	• Setting up of new STPI Centres at Siliguri, Haldia (West Bengal), Kakinada (AP) and Berhampur (Orissa) • Incubation facility at Guwahati	State Government making available land, built-up space and grant Dec 2005 SFC Approval March 2006		STPI Centre at Siliguri is operational since 14th February 2006. The building for STPI Centre at Haldia is under construction by the State Government and yet to be handed over. Government of Andhra Pradesh has sanctioned Rs 1 crore for setting up of STPI at Kakinada and identified 3 acres of land. A built up space of 20,000 sq.ft is awaited from the State Government. For STPI at Berhampur, the State Government has already provided a grant-in-aid of Rs 1 Crore and identified 3 acres of land for STPI. The State Government is to provide 10,000 sq.ft built up space to STPI. MOU has been Singed with Government of Orissa on July 2005.

Outcome Budget 2006-07 - Status of implementation / progress during the first Nine months								
Name of Scheme	**Objective / Outcome**	**Outlay 2006-07 (Rs. in crore)**			**Quantifiable Deliverables / Physical Output**	**Projected Outcomes**	**Processes / Time basis**	**Status as on 31.12.2006**
		Plan	**N-Plan**	**Comp. IEBR**				
STPI &Export Promotion	To promote India's export of Electronics and IT Services	-	4.00	2.85	To arrange participation of Indian SMEs in 7 Export Promotional events abroad India Soft 2007 – A forum which provides Indian SMEs an opportunity to meet foreign buyers	It enables Indian SMEs to increase their export potential.	Participation in 7 events from June 2006 – March 2007	**Organised following Export Promotional events** 1. Outsource World London, July 2006. 2. Frankfurt Book Fair, October 4-8 2006, Germany 3. OutsourceWorld New York, 17-18 November 2006 4. Electronica 2006, Munich, Germany 5. Gitex 2006, Dubai **Will Organise follwoing events:** 1. INDIASOFT 2007, 9-10 January 2007, Hyderabad 2. CeBIT 2007, 15-21,March 2007, Hannover, Germany.

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

Centre for Materials for Electronics Technology (C-MET) is a Society Department of Information Technology for development of viable technologies in the area of materials mainly for electronics. C-MET is operating with its laboratories at Pune, Hyderabad and Thrissur. C-MET's mission is to develop knowledge base in electronics materials and their processing technology for the Indian industry and become a source of critical electronics materials, know-how and technical services for the industry and other sectors of economy.

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.

C-MET laboratories are situated in Pune, Hyderabad and Thrissur with Headquarters in Pune.

C-MET's MISSION

The mission of C-MET is to develop knowledge base in electronic materials and their processing technology and become source of critical electronic materials, know-how and technical services for the industry and other sectors of the economy.

Targets and Achievements for the year 2006-07;

Area/ Projects	Physical Targets	Achievements
Ultra-high Purity Materials Development of Pilot Plant Technology for the Purification of high purity Cadmium	• Modifications / upgradation of existing zone refiner / vacuum distillation system by automation and reaction chamber resign respectively. • Optimization of process parameters to achieve 6N and above purity cadmium. • Testing and evaluation at end user's place. • Fine tuning of overall process parameters and integration. • Report preparation	• The heater design have been finalized and fabricated for narrow zone widths. • Four cycles (1 cycle = 15 passes) of Cadmium zone refining has been completed. • The samples were given to NCCCM, Hyderabad for ICPMS analysis for the estimation of impurities. • The process parameters will be studied after obtaining analytical results. • In progress

Pilot scale preparation of low voltage capacitor grade Tantalum powder (300 kg/ annum)	• Experiments on modified systems. • Optimization of process parameters. • Testing & evaluation of Ta powder at user industries • Regular production of Ta powder at desired scale. • Documentation is under process.	• Experiments on powder processing & evaluation continued. • Process parameters optimized upto sodium reduction & optimization continued for powder processing. • CV of 15000 – 16000 µFV/gm & DCL of <0.0005 MA/ µFV achieved on repeating basis. • Production continued upto sodium reduction, 25 Kg Tantalum powder supplied to DMRL. • Documentation is in progress.
Development of Process technology for the Pilot level preparation of Tant-alum pentoxide.	• Project is completed.	• Documentation is in progress.
Electronic Packaging Development of materials and processes for Electronic Packaging	• Upscaling of solder paste. • Capability for processing basic LTCC interconnects upto a few layers • Development of indigenous materials for microvia (Photodielectric & Isotropic conducting epoxy) • Technology for preparation of solder bumps	• The LTCC fabrication process is fully developed. A prototype pressure sensor package has been designed and fabricated. A multilayer test package has been delivered to the sponsoring agency.
Development of LTCC green tapes	• LTCC Green tapes based on Al_2O_3+glass composition • LTCC green tapes based on P_2O_5-B_2O_3-SiO_2 glass-ceramic composition • Process technology for LTCC green tapes by co-firing with 100% Ag-based paste	• Optimized LTCC tape casting slurry composition and prepared defect free trial tapes. • The tapes were co-fired with 100% Ag paste and its compatibility has been studied. • Prepared tapes of 6” x 6” size

Development of Polymer-ceramic based microwave substrates	250 gms batch PTFE/ceramic high dielectric composites • High dielectric and low loss microwave substrates (2 x 2" size and 0.025" thick) • 250 gms batch PTFE/ceramic/woven glass low dielectric composites Low dielectric and low loss microwave substrates (2 x 2" size and 0.025" thick).	• Optimized 250g batch high dielectric composition systems based on PTFE/rutile/microfibre glass through sigma mixing process. • Fine tuning of the microwave dielectric properties of cu-cladded high K substrates have been carried out through ring resonator method. • 250g batch low dielectric low loss composite systems optimized through sigma mixing process using PTFE as the matrix, fused quartz as the particulate filler and micro fibre glass as the reinforcing agent. • Cu-cladding over thermolaminated low K substrates has been carried out through electroless and electroplating process.
Optoelectronics Materials Development of Nanocrystalline semiconductor doped coloured Glasses	• Continuation of development of GG-400, OG-515 for larger trials. • GG-495 schott type glasses will be developed for remote sensing camera .	• The coloured glass of GG-400 has developed. The homogeneity and sharp optical cut was not obtained. Different host glass needs tobe designed. • The Filter of OG-515 type in 25mm dia was obtained from 50mm blank. The samples sent to ISRO for testing. • Preliminary experiment on GG-495 glass completed successfully and now the optimization is in progress.

Development of organic polymer liquid crystal based non-liner / Wave guide optoelectronic materials	• Polymer of 50 gm batch size will be developed for NLO application • Evaluation of SHG properties.	• Optical grade Poly (methylmethacrylate) (PMMA) was synthesized by free radical polymerization at 50 gm batch size and prepared non linear optical (NLO) chromophore i.e., m - Nitroaniline (0 to 30 wt.%) doped PMMA films (thickness = ~80µm) by solvent cast method. • Second harmonic generation (SHG) study of the films was carried using Nd:YAG laser set-up. The films were poled above the glass transition temperature of PMMA for 15 minutes by applying 10-30 V poling voltage. • The intensity of SHG signal increases with increasing the concentration of m-Nitroaniline in PMMA matrix.
Quantum dots Polymer Composites for Display Devices	• Some suitably identified optically transparent polymer(s) • Methods for preparation of various electronic grade organometallic chemicals e.g. dimethyl cadmium • A methods for preparation of quantum dots of II-VI semiconductors **a.** for preparation of air stable QDs of CdS **b.** for preparation of air stable QDs of CdSe	• CdS/PMMA was completed and quantum dots of size less than 5 nm were prepared. • Self supported films of CdS and CdSe /PMMA were prepared and tested for photoluminescence. • The process for preparation of these lights, blue, yellow and orange were optimized.
Sensors & Actuators Polymeric Sensors	• Novel materials and the processes to make the humidity sensors • Efforts will be made to combine suitable materials to make sensors in the device form. • Laboratory scale –prototype sensors will be developed and will be tested not only in our Laboratory but also outside (like in Universities and Industries). • A technology transfer package / document for laboratory scale production of such sensors	• Inter digital pattern was made on which polyaniline derivatives was spin coated. • This sensing device was found to be a very good Humidity Sensor.
Design & development of Multilayer actuator	• 250 g batch of PMN-PT material • Multilayer electrostrictive actuator	• The PMN-PT powder was prepared and the phase purity was confirmed using XRD. • Developed multilayer electrostrictive actuator, evaluation of the same is under progress.

6.2.6 Education & Research Network (ERNET) India:

Education & Research Network (ERNET), India is a society of the Department of Information Technology. The activities at ERNET India are organized around five technology focus areas: National Academic and Research Network; Research and Development in the area of Data Communication and its Application; Human Resource Development in the area of High-end Networking; Educational Content; and Campus-wide High Speed Local Area Network. All the five areas have contributed significantly in the growth of ERNET India. The innovations and breakthrough achieved through these areas, represent the core strengths of ERNET. ERNET has been working to ensure that end-users enjoy the best experience and satisfaction. The architecture of the Network is designed to deliver broadband value added service and applications like Webcasting, IPcasting, Digital Library and Distance Learning. ERNET India is in a position to connect any institution anywhere in the country on its backbone to share resources and undertake collaborative research and applications. The ERNET Backbone is IPV6 enabled.

Target and Achievement for the year 2006-07

Targets	Achievement
A total of 149 universities to be provided internet connectivity under the UGC Infonet program. The project also aims to provide e-journals to the universities through this connectivity	All universities have been connected through ERNET backbone. The universities are using the connectivity for accessing various applications like e-journal and digital library hosted on servers at ERNET India and elsewhere in the world.
To provide value added services such as video conferencing, IP based voice solution to ICAR institutions under the ICAR Project. To Set up Information Hubs at 200 Krishi Vigyan Kendras (KVKs) under ICAR and establish a VSAT Hub for ICAR to connect these KVKs	Work on setting up Video conferencing and IP based voice solution for ICAR Intranet is under progress. Proposal has been submitted to ICAR for setting up Information Hubs at ICAR's 200 Krishi Vigyan Kendras and C-Band VSAT Hub at ICAR head office.
To establish .in Internet domain registrations for education & research Institutions	A complete domain registration setup with state of the art DNS servers is set up for registering domains under edu.in, res.in and ac.in domain names.

Campus Wide Network to be completed in the Annamalai University, Arunachal University and Manipur University.	Campus Wide Networks have been established at Annamalai University and Arunachal University. Work related with Campus Network at Manipur University is in progress.
Advanced network training to be imparted to personnel from UGC, Indian Navy and ICAR	300 personnel from Indian Navy have been provided training on Computer Network Administration and its Security.
New Point of Presence (POP) to be opened at Jaipur and Trivendrum	Two of ERNET India's PoPs at University of Rajasthan, Jaipur and IITM, Trivendrum have been established and operational.
To enable multi Protocol Label Switching (MPLS) based routing on ERNET backbone.	ERNET India's backbone has been enabled for Multi Protocol Label Switching (MPLS). This will enable IP packets ERNET India's backbone to traverse fast. Also this will enable fast traversal of IP packets in ERNET India's backbone, resulting fast network response for internet access for ERNET India's users. Also this will enable ERNET India to provide VALAN connectivity all across the country to its users.
Connectivity between ERNET India & European Research Network (GEANT)	45 Mbps IPLC connectivity has been established between DANTE PoP at Milan, Italy and CDAC, Mumbai in August 06. 34 Mbps point-to-point connectivity has been established from TIFR, Mumbai and VECC, Kolkata to CDAC, Mumbai respectively. Process of establishing (i) point-to-point 34 Mbps connectivity between BARC and CDAC Mumbai. (ii) VPN connectivity from selected institutes to VECC, Kolkata and TIFR, Mumbai is under way. The links will be operational by Jan 2007. This 34 Mbps point-to-point connectivity between ERNET India and European Research Network (GEANT) will facilitate research work for Indian and European Scientists.
IPV6 enabled ERNET back bone and upgradation of Internet gateway bandwidth.	ERNET Back bone has been IPV6 enabled and the total internet bandwidth of ERNET has been upgraded to 144Mbps.

Communication fabric for the GARUDA - The Grid computing project	Communication fabric for GARUDA with total backbone capacity of 2.4Gbps has been established. Total of 45 institutes in 17 cities across India have been connected. 22 Institutes have been connected at 100 Mbps and 23 Institutes at 10 Mbps bandwidth.
Video Conferencing facility with GARUDA Users to be established.	Tandberg 6000 MXP has been installed at Network Control Centre and successful meetings have been held with GARUDA users through video conferencing.
To establish enterprise management syatem for enhancing network security and centrally managed hardware and application from a central console located at Delhi.	Enterprises management system and security software has been installed at all the PoPs of ERNET and is running successfully.
ERNET India has undertaken a project to set up community information centers in the government schools (CIC-VV) located in Andaman & Nicobar Islands and Lakshadweep Islands, with a purpose of imparting ICT based education in schools. Under the project 71number of CIC sites are to be set up	Out of 71 CIC-VV sites, all the 30 sites located in Lakshdweep UT have been completed. 41 sites are in Andaman & Nicobar UT and out of these, building is not ready at 2 sites. Computer Lab has been setup in rest of all 39 schools, however at 4 schools VSAT platform is not ready as civil material is not available at these sites.
Hundred schools to be provided internet connectivity under the Navodya vidyalaya samiti project (PH-II).	All 100 schools have been provided internet connectivity.
A project on the provisions of assistive technology for children with disabilities is being implemented by ERNET India. For inculcating the computer literacy, enhancing the skills and providing job oriented training to the disabled children in IT.	The project has been initiated and IT vocational Centre has been implemented in 20 schools. 10 Each in Delhi NCR and Tamilnadu region during 2006-07, which covered schools of visually impaired & hearing impaired children. The training of children is undergoing in these schools. After the first phase, the programme will be evaluated and modified for next phase to extend to schools all over the country.

Other achievements	• Established a complete digital library with vast materials on different scientific, medical, general and course curriculum of CBSE • Conducted summer training programs for MCA and BE students • Developed various e-governance packages for automating the personal, technical and finance sections of ERNET India • 24 hour Network Control Center has been started at ERNET HQ • Provided Internet connectivity to 93 new institutions with this the user base of ERNET has increased to 1335 organizations. • Hosted Web Sites for CEC, Central Council for research in Yoga and Naturopathy, Kendriya Vidyalaya Ponda, Manipur Institute of Technology, National Bureau of animal Genetic Resources & National Centre for Weed Science.

6.2.7 Electronics and Computer Software Export Promotion Council (ESC):

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:

- To promote India's electronics, software and IT trade, ESC facilitates participation in Global Trade Shows / Expositions and Conferences etc.
- ESC undertakes Market Research / Studies in major overseas markets.
- For enhancing the brand equity of Indian IT industry, ESC undertakes publicity Campaigns in overseas markets.
- ESC facilitates business interface between Indian and foreign companies through Buyers – Seller Meets, Receiving and Mounting Business Missions and Match – making and Contact Promotion.
- ESC locates new business partners for Indian electronics, computer software and IT companies.
- For facilitating foreign trade, ESC provide on-line facility for Data Search, Information Dissemination and Broadcast using internet and Dial-up facilities.

ESC: Value – Added Services

ESC provides a set of value-added services to its members as well as overseas companies.

- ESC has a critical mass of Information on electronics, IT and services sectors.
- ESC provides Information at a single point.
- ESC assists in moving up the value chain.
- Network of counterpart organizations in 40 countries.

Target & Achievements during the year 2006-07

Targets	Achievement
Participation in Promotional Events abroad: The Council had planned to organize participation of Indian Companies in 6 major International Events abroad.	The Council has since successfully organized participation of Indian Companies in 5 major international events abroad. They are:- (1) Outsource World, London during July 12-13,2006 (2) Frankfurt Book fair, Germany during October 4-8,2006. (3) Outsource World, New York, USA during October 17-18,2006 (4) Electronica 2006, Myunich, Germany during November 14-17,2006 (5) Gitex, Dubai during November 18-22,2006 The CeBIT Exhibition at Hannover, Germany is scheduled to be held in March 2007. The Council is organizing participation of its member companies in this event and it is expected that around 30 companies would participate under the banner of this Council.
India Soft 2007 and Its Road Shows:	The INDIASOFT 2007 event was held at Hyderabad during January 9-10, 2007. The Roadshows for the event were organized at different places with in India including Pune, Hyderabad, Bangalore, Chennai and Kerala.
Publications: The Council has planned to bring out some publications etc.	The publication are being brought out by the Council from time to time for the benefit of its registered member exporters.
Participation in delegations abroad: The Council has planned to participate in some delegations abroad.	**The Council organized some delegation visits abroad-** 1) FOCUS ASEAN:(April,2006) a) Malaysia b) Australia 2) FOCUS LAC:(Oct. – Nov. 2006) a) Brazil b) Mexico 3) FOCUS AFRICA:(February, 2007) ESC is taking delegation to a) Ivory Coast b) Ghana c) Nigeria.