

Arthur C Clarke Institute for Modern Technologies

Annual Report for the year ended 31.12.2012

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Arthur C Clarke Institute for Modern Technologies
Katubedda
Moratuwa.

2013.12.17

Hon. Minister of Technology & Research
Ministry of Technology and Research
408, Galle Road
Colombo 03.

Hon. Minister,

Annual Report of the Arthur C Clarke Institute for Modern Technologies for the Period from 1st January to 31st December 2012

In terms of section 40 of part vii of the Science & Technology Development Act. No. 11 of 1994, I have honour to submit herewith the Annual Report of the Arthur C Clarke Institute for Modern Technologies for the year 2012 along with,

- (a) A copy of the Audited Income & Expenditure Account
- (b) A copy of the Audited Balance Sheet
- (c) Auditor General's Report and the Observations of the Institute

Yours faithfully,



Director & CEO
Arthur C Clarke Institute for Modern Technologies

Annual Report

for the year ended 31.12.2012

1.0 General

1.1 Governing Legislation

The Arthur C Clarke Institute for Modern Technologies (ACCIMT) is a statutory corporation operating within the purview of the Ministry of Technology and Research. The ACCIMT was established on April 1, 1998 by the Science and Technology Development Act. No. 11 of 1994 of the Parliament of Sri Lanka, as successor to the Arthur C Clarke Centre for Modern Technologies (ACCMT) established by the Act No. 30 of 1984.

The functions of the Arthur C Clarke Institute for Modern Technologies as specified in the Act are as follows:

- (a) to accelerate the introduction of modern technologies to Sri Lanka by
 - (i) initiating, promoting and conducting research and development in the application of modern technologies
 - (ii) providing research and development support to the Government and private sector undertakings in the application of modern technologies and
 - (iii) training of personnel in modern technologies to meet the needs of the Government and private sector undertakings and
- (b) to promote future studies

The areas of modern technologies include Communication and related Sciences, Information Technology, Electronics, Micro-electronics, Space Technologies, Robotics, Photonics and new materials.

1.2 Vision

The **Vision** of the Arthur C Clarke Institute for Modern Technologies is to be Sri Lanka's leading Centre of Excellence in Research & Development and, in facilitation of domestic Technology Development, in Electronics, Telecommunications, Information Technology, Space Technology and related fields.

1.3 Mission

The **Mission** of the Arthur C Clarke Institute for Modern Technologies is to foster and facilitate development of the domestic base of technological capabilities in the designated fields of specialization, through engaging in and facilitation of Research and Development, and provision of advance training and industrial services.

1.4 Governing Ministry

The ACCIMT, (formerly known as the ACCMT) which was under the purview of the Ministry of Higher Education in 1984 was brought under the purview of the Ministry of Industries, Science and Technology in 1990.

It came under the purview of the Ministry of Science and Technology in August 1994. With the establishment of the new Ministry for Economic Reform, Science and Technology, in December 2000 the ACCIMT too was transferred under its purview. In 2004, the institute came under the purview of the newly constituted Ministry of Science and Technology. In 2010 The Ministry of Science & Technology has renamed as the Ministry of Technology & Research and the ACCIMT too function under the purview of this Ministry.

1.5 Members of the Board of Governors

No	Name of Board Member
01.	Prof. Lalith D B K Gamage - Chairman
02.	Eng. Sanath Panawennage – Director /CEO
03.	Prof. (Mrs) I J Dayawansa
04.	Mr. S Merrick Gooneratne
05.	Prof. H Abayagunawardena
06.	Dr. Lilantha Samaranayake
07.	Prof. Dhammika Tantrigoda
08.	Mr.Thusha Weerasooriya
09.	Ms. J Chandima Weligamage
10.	Prof. A K W Jayawardena
11.	Prof. S B S Abayakoon (up to August 2012)
12.	Prof. A Senaratne (w.e.f September 2012)

1.6 Board Meeting held for the year 2012

Date of Meeting held	Meeting No.
20/1/2012	2012/01
17/2/2012	2012/02
16/3/2012	2012/03
20/4/2012	2012/04
18/5/2012	2012/05
15/6/2012	2012/06
20/7/2012	2012/07
17/8/2012	2012/08
14/9/2012	2012/09
19/10/2012	2012/10
16/11/2012	2012/11
14/12/2012	2012/12

2.0 Executive Summary

During the year under review, the Institution made substantial progress in its overall performance in the areas of research and development, training and technological services, as well as in internal capacity development activities, viewed against the backdrop of the two major continuing constraints, namely the difficulties in recruitment and retention of staff in the core technical disciplines due to low remuneration, and the inadequate allocation and release of funds for capital expenditure.

The advanced technological services delivered to the industry, which included collaborative projects to recover sophisticated electronic systems in a variety of high tech industrial applications, test and measurement services as well as training services expanded in substantial volumes enabling internally generated revenue to grow up to 41% of total recurrent expenditure, while broad basing the industrial clientele served by the Institute. An important highlight in the area of internal capacity building during the year was the grant of accreditation by the Sri Lanka Accreditation Board (SLAB) to the surge simulation and testing laboratory facility of the ACCIMT, which is the first and only such accredited laboratory in the country.

The research and development projects which were initiated or continued during the year included advanced design and development of state-of-the-art Traffic Light Controller System, development of a basic Tele Medicine Diagnostic Kit, development of a Tea Quality Grading System and Colour Separating System, and development of a Solar Powered Advertisement Holder. Research projects undertaken during the year in the area of RS and GIS included 'Urban Green Space Analysis in Colombo using Theos Satellite Imagery' and 'Initial site survey for a National Astronomical Observatory using TIR Satellite Data'.

In addition, the Space Applications Division of the Institute was also involved in six research projects in Astronomy with 3 of them being undertaken in collaboration with national universities. The internal research projects in Astronomy undertaken by the Division included 'Study of Barmer discontinuity of B and A type of stars in near UV spectroscopy' and 'Investigation of the H-alpha line profile of Be star HR 5149'.

The industry initiated technology collaboration projects which necessarily involved a significant volume of work of R& D nature included the continued hardware recovery services provided to the Sri Lanka Railways for the recovery of inoperative advanced micro processor based control system of Alstom Class M9 Locomotives and Sifang Class S9 power coaches. Recovery of electronic equipment and the testing facilities of Lakvijaya Coal Power Station at Norochhole too was another significant industrial collaboration project.

During the year, the Institute also maintained and enhanced the delivery of its services to the industrial clientele on test and measurement services, with the number of consultancies, measurements and advanced hardware recovery assignments carried out for the industry amounting to 67, and the number of calibration certificates and performance test reports issued by the equipment collaboration and conformity assessment testing facilities amounting to 245. Significant among the expansion and enhancement of test and measurement facilities was the initiative made to establish a testing facility for conformity assessment of Residual Current Circuit Breakers (RCCBs) and related electrical gear on an understanding reached with the Sri Lanka Standards Institution (SLSI) to provide the required conformity assessment facilities.

A number of information system development projects were also carried out by the Information Technology Division, the clients being mainly the national universities and other public sector agencies.

On the training domain, the Institute conducted 6 types of short term Continuing Professional Development (CPD) courses on highly specialized subject areas such as microprocessor based Embedded Control Systems, Modern Power Electronics and Programmable Logic Controllers etc. for the benefit of mainly engineers and technologists from public and private sector Institutions. The total number of professionals attended such courses during the year was 275. In the meantime, the Institute also provided training opportunities through its intermediate training courses and workshops, including those specially conducted for 'Divi Neguma' and 'Vidatha programmes', with the number of participants that attended the 10 different types of training courses/workshops conducted during the year being 818.

The construction work of the new four storied building which commenced in February 2012 was nearing completion by the end of the year. The building will add a floor area of approximately 8,000 sq. ft. to the building space.

Recruitment and retention of professional staff in the key disciplines of specialization, in view of the enormous disparity between the market salaries and what is paid by the Institute, remained the single largest constraint facing the Institute. As a percentage of the approved cadre positions that require basic or higher qualifications as an engineer, the number existing as at 2012.12.31 amounted to 36%.

Despite the above, the Institute recorded an internally generated revenue of Rs. 37.0 million which is the highest ever in the history of the Institute both as an absolute amount and also as a percentage of total recurrent expenditure of the Institute. While this was on part due to the increased technological services and industry collaborative projects, and on part due to completion of several such continuing projects during the year.

The Government grants received during the year for capital and recurrent expenditure were Rs.40.0 million and Rs.70.0 million respectively.

3.0 Industry-Sponsored R&D Projects and Other Technical Services to the Industry

The Institute has made substantial contributions to the industry through

- R & D projects undertaken as per specific requests by the industry,
- Test & Measurement Services
- Equipment Calibration and Recovery Services
- Information Systems Development Projects
- Consultancy assignments, and
- Contractual maintenance of systems and facilities.

3.1 Industry-Initiated Research & Development Activities

3.1.1 Recovery of Microprocessor/Digital Signal Processor based electronic control subsystems of the Class M9 Locomotives Alstom (France) AD32C

Identifying the requirement of Sri Lanka Railways as a nationally important project, where such a service was rare within the island as well as in other countries due to non availability of mother company support and literature (service manual etc.), ACCIMT explored the areas and the types of Locomotives of SLR which needed advanced recovery exercises in May 2010, and continued the advanced recovery services during 2011 and 2012. ACCIMT commenced the advanced diagnosis and recovery tasks from Alstom AD32C Class M9 locomotives, which are the most powerful locomotives in the SLR locomotive fleet with sophisticated controls and computer based diagnostic tools.

During the year the maintenance support in using computer diagnostic tools for event logging and sensor fault tracing, for the running locomotives having sub units recovered by ACCIMT, was continued. In addition, new recoveries which are listed below were commenced. Also fine tuning work on all Viking units recovered by ACCIMT was attended for optimum power output.

Microprocessor based sub systems recovered in Class M9 locomotives during the year.

1. Driver Display Console
2. Traction Control Units
3. Platine Units (Generator control)
4. IGBT Driver Units
5. Rectifier Panel

3.1.2 Recovery of Microprocessor based electronic control subsystems of the Class S9 Power Coaches (make Sefang)

Continued with the fault identification and testing of two Car Control Systems.

3.1.3 Recovery of Electronic equipment at Lakvijaya coal power station Norochhole

On the request of the CEB power station at Norochhole, attended to recovery of equipment used in the oil and water test laboratories which are used for sample testing and the chlorination plant operator panel. The list of equipment is detailed below and this exercise generated an income of Rs. 497,000.00

- Operator panel of the chlorination plant
- Two equipment Petroleum solidifying point and pour point detector (ND-9A)
- Two equipment Petroleum oils and synthetic fluids demulsibility characteristics tester (SR-3A)
- Petroleum products kinematic viscosity tester (YN-8)
- Digital display oxygen bomb calorimeter (XRY-1A)

3.1.4 Customized Display Systems for industrial clients

Two projects to design and develop customized display systems were carried out to Sri Lankan Airlines and Savikma Automation.

In the project to Sri Lankan Airlines the ambient temperature of their warehouse was sensed using a precision temperature sensor and displayed using a 7 inch height display. In the project carried out to Savikma Automation a counter display for monitoring the production level of an assembly line was designed.

3.2 Information Systems Development Projects

The Information Technology Division of the institute has been developing information systems solutions for the public and the private sector organizations on various organization-specific applications upon request. The main information system projects undertaken by the Institute during the year include the following:

- Local Language Email and Internet

The project was initially undertaken in collaboration with the University of Moratuwa, to localize the two open source software, Mozilla Thunderbird and Firefox Web Browser, and were officially released with application itself in December 2009. The Institute continued with regular updates of Sinhala and Sri Lankan Tamil versions of the above two applications. The following upgrades were localized and released during the year:

* Thunderbird : TB 12.0 to TB 17.0

* Firefox : Firefox 12.0 to Firefox 17.0

- Life Insurance System – Sanasa Insurance (Pvt.) Ltd.

This is an on-line system for maintaining of life insurance policies of the client. The system consisted of 7 policy products, namely, Senasiya, Pilsarana, Senehasa, Sithumina, Jayathura, Divithura and Janamithuru completed in 2010 and 3 products, namely Divithura Plus, Divijaya, Sensaiya Group (Loan Protection Scheme) included during the year 2011.

Following new products were included to the existing Life Insurance System during the year 2012;

Divijaya Plus

Divijaya DDF

- On-line Administration System – Buddhist & Pali University

This is an on-line system for Administration divisions consisting of 07 modules, namely, Student Registration module (Internal & External), Examinations module (Internal & External), Employee Information module, Payroll & Accounts module, Library module, Stores module and the Official Web Site.

Minor modifications were done to Internal Student Registration and Library modules completed in 2011.

Modifications were done and Initial data was entered to the Personnel Information system.

- Payroll & Accounting System – Postgraduate Institute of Management (PIM)

A project to computerize the functions of the Finance Division of PIM including the payroll was commenced in 2011. Data Entry module of Payroll System and relevant reports were installed at client's site during 2011 and running of the payroll system was commenced in 2012. Development of few text files as per format of UGC and development of salary voucher to be integrated to the Accounts System were also done.

- E-governance Software Development for community services -On-Site Fine Payment System for Police (OSPS)

Request for Proposal (RFP) document was studied and compiling of Data Sheet was done accordingly. Bid documents were prepared and submitted.

- Library system for Sri Lanka Bhikshu University, Anuradhapura

This is a project to computerize the library system of Sri Lanka Bhikshu University, Anuradhapura. As requested during the initial discussions, a beta version for the system was designed & developed and was installed at Sri Lanka Bhikshu University, Anuradhapura.

- Payroll System – ITUM

Some modifications to the Data Entry module were carried out and completed creation of few reports. Payroll system of Oct. 2012 was compared with the manual payroll system.

- APCTT Database – ITI

This database and system was developed by ACCIMT in 2008. In year 2012, configuration of new Server was done after virus attack.

3.3 Test and Measurement Hardware Recovery and Consultancy Services

3.3.1 Instrument Calibration /Performance Test Services offered by the Calibration Laboratory - Industrial Services Division

During 2012, 75 numbers of calibrations/ performance tests/measurements of electrical /electronic test equipments /systems were performed and test reports issued to the Industry.

Calibration /Performance tests	Main Clients
• Digital and analog Multimeters /Voltmeters/ Watt meters/ Clamp meters • Oscilloscopes/ Scope meters • Miscellaneous Instruments for measurements related to voltage, current, resistance and time • Power supplies • Insulation Testers/ Power & Ground Testers • Other Measurements	Colombo Dockyard (Pvt) Ltd DPJ Holdings (Pvt) Ltd , Vario systems (Pvt) Ltd. Toss Lanka pvt ltd. Sri Lanka Ports Authority Sri Lanka Air Force, Open University Venora International Project (Pvt) Ltd FDK Lanka (Pvt) Ltd Cosmecx Network (Pvt) Ltd LTL Transformers (Pvt) Ltd Load Star (Pvt) Ltd and ACCIMT

3.3.2 Hardware Recovery & Consultancy Services offered by the Industrial Services Division

Hardware recovery /Consultancy	Clients
Teaching Module-Heater	University of Moratuwa.
Clamp Meter (Kewtech)	Powernet (Pvt)Ltd.,

3.3.3 Test & Measurement Services of Power Electronics Measurement Laboratory- Electronics & Microelectronics Division

During the year, the division issued 164 performance test reports for testing of surge protective devices, measurement of limiting voltage of surge protective devices, performance testing of electronic ballasts and measurement of switching transients and performance testing of batteries.

Type of consultancy	Client
Measurement of limiting voltage of surge protective devices (34 job)	Micro Power Engineering, Sri Lanka Telecom, Lyman Alpha (pvt) Ltd., Systematic devices pvt ltd, Hyperjet Technologies Pvt Ltd., CEL Lanka Pvt Ltd
Measurement of earth resistance, Power quality and earth resistance, Dielectric strength & insulation resistance, Contact resistance (5 jobs)	Micro Power Engineering, Kamal PVC Pvt Ltd, Flintech Transducers Pvt Ltd, Hyperjet Technologies.
Performance testing of electronic energy savers(9 jobs)	Synex International Pvt Ltd, Orel SLK Pvt Ltd, Nature Efficient Electronics

Performance testing of batteries

A total of 116 battery performance testing jobs were carried out including 36 jobs for Douglas and Sons, 41 jobs for Tyre House, 08 jobs for Sri Lanka Standards Institution, 06 jobs for Associated Motorways and 25 jobs for 09 other clients.

3.3.4 Troubleshooting/Repair Services and Consultancy Assignments Carried Out by Electronics & Microelectronics Division

Type of Job	Client
Troubleshooting and Repair DC Supplies	Ceylon Electricity Board
Troubleshooting and Repair of Star Printers and soldering & desoldering of 144pin surface mount ICs(27 jobs)	Bartleet Technoloiges
Troubleshooting and Repair of earth resistance meters	Synex International Pvt Ltd
Troubleshooting and Repair of an injection moulding machine	Ozone Mineral Water Export Pvt Ltd
Troubleshooting and Repair of incinerators	Systematic devices pvt ltd
Troubleshooting and Repair of Thermometers	Finlays Cold Storage
Troubleshooting and Repair of polarimeter	Sri Lanka Standards Institution
Troubleshooting and Repair of Sonic Shifter pulse cards	Haycarb Ltd
Troubleshooting and Repair of voltage recorders	Lanka Electricity Company
Test procedures for LCD/LED TV testing	Orel Manufacturing Pvt Ltd
Design of a 7" height temperature display	Sri Lankan Airlines
Other 17miscellaneous jobs	

3.3.5 Test and measurements services, hardware recovery – Communications Division

The testing and Measurement services, general hardware recovery offered by the Communication Division during the year for multiple clients during the year were mainly in the following areas and for the listed clients.

Test and Measurement, Hardware recovery service, Technical Consultancy	Clients
Test reports on coaxial cables	Kelani Cables Ltd.
Memory chip and microcontroller programming	Multiple clients
Base Transmitter Measurements, Antenna system measurements, Interference measurements	Sri Lanka Rupavahini Corporation, Flintec Pvt. Ltd. Sky Television Pvt. Ltd. Queens Radio Pvt. Ltd.
Field Strength Measurement and reporting	SPM Electronic Engineering Pvt Ltd.
Hardware recovery of Jingle Units	Ceylon Cold Stores

3.3.6 Micro-controller/ EPROM/EEPROM Programming

ACCIMT staff carried out industrial/ client assistance activities by providing EPROM/EEPROM/microcontroller erasing/programming services.

3.4 Contractual Services

- Contractual maintenance of Databases and other Information Systems

- Accounts System - University of Moratuwa. Maintenance agreement has been signed.
- Accounts System - University of Sri Jayewardenepura. Maintenance agreement has been signed.
- Payroll System - Development Lotteries Board - Maintenance agreement has been signed.

- The Communication Division provided contractual systems maintenance services for maintaining Colombo Fort Clock Tower drive system operated by the Central Bank of Sri Lanka.

4.0 In-house R & D Projects, Research Activities on Space Sciences, and Internal Capacity Building

4.1 In-house R&D Projects

The in-house R & D projects which have been initiated and/or continued by the institute during the year include the following:

4.1.1 Tea Quality Grading System (Tea Colour Separator)

Addressing the need of low grown tea factory requirement of Sri Lanka, tea leaf grading (based on colour) equipment based on high speed camera and electronic sorting mechanism was initiated as an in-house project. The cost of high quality imported equipment is in the price range of Rs. 15 million. Since the cost of such machine is very high, for small tea factories the output quality of the tea is not up to international market standards not due to the problem of using quality tea colour separating systems.

During the year a technical proposal was prepared after studying several such imported systems to build a single channel (one camera) prototype system including all the electronics and mechanical subsystems. The necessary electronic test systems were implemented and FPGA (Field Programmable Gate Array) programming familiarization commenced together with the mechanical system drawing.

4.1.2 Telemedicine System

During the year an in-house project was started to design and develop a system to remotely collect patient data (blood pressure, temperature, heart beat) utilizing a worn jacket and to communicate the information to medical doctor in a far away hospital. The product is aimed to be used at social centres (or nanasala) initially for testing and the ultimate desire is to use the jacket connected to communication equipment (PC) in transferring the patient data operated by any person for remote diagnosis to a doctor.

During the year the requirements were identified to initiate the modularized project and testing commenced to acquire the diagnosis data to the computer, necessary interface modifications identified.

4.1.3 Reviving the Traffic Light Controller System Designed and Developed by ACCIMT

In early 1990s, ACCIMT developed a microcontroller based Traffic Light Control system which was successfully operated in 05 intersections in Colombo. In year 2011, ACCIMT started upgrading the DOS based user interface to windows version and completed in 2012. ACCIMT commenced and completed the prototype of the upgraded version which incorporates features such as the countdown facility and pedestrian actuating.

The division completed the 16 phase-stage combination traffic light model with major features such as manual over-riding facility, count down module, windows based user friendly interface software and green conflict detection. Steps are being taken to demonstrate this model to the State Development and Construction Corporation.

4.1.4 Solar Powered Advertisement Holder

The division completed a prototype solar powered advertisement holder with efficient illumination system using white LEDs. The use of white LEDs has increased the efficiency of the system and has reduced the wattage requirement of the solar panel.

4.1.5 Remote Street Light Controller

An in house activity was carried out on a prototype design of a Street Light Controller for stretch of lights controlling in the Colombo city. Improvements were done to the initial design on CMC requirements and the proposal to install 10 units at Colombo city had been submitted.

4.1.6 Wireless Irrigation Automation System

The drip irrigation system mainly comprises of the main pipe, water passage way and the emitters through which water drips into the soil. In addition the system consists of sensor units (number depends on the number of drip lines), a fertilization unit, a pump, filters and a flow meter to run the system smoothly and efficiently. The division planned to develop the automated pump, automated fertilization unit, sensor unit and User indication/control unit as sub systems. The division has completed developing the sensor unit and user indication/control unit.

4.2 Research work in Astronomy

4.2.1 Study of Balmer discontinuity of B and A type stars in near UV spectroscopy

Electron temperature of hot stars can be determined by the Balmer Discontinuity. In this research few selected B and A spectral type stars are to be observed in spectroscopy near the Balmer discontinuity at 3647Å using the 45cm telescope at ACCIMT. A UV band CCD camera and a UV transmitting lens were procured. An optical adapter was designed and constructed locally, to mount UV band CCD camera to the spectrograph of 45cm telescope.

Spectra of few selected A type stars namely HD 45348, HD 47105, HD 48915, HD 102647 were obtained near the Balmer discontinuity. These spectra were reduced and wavelength calibrated. Need to capture more spectra of bright stars to continue the research. Due to the technical problem encountered in the UV CCD camera project was postponed to 2013.

4.2.2 Setting up CALLISTO (Compact Astronomical Low-cost Low-frequency Instrument for Spectroscopy and Transportable Observatory) at ACCIMT

The radio emissions from solar flares can be studied using the Compact Astronomical Low-cost Low-frequency Instrument for Spectroscopy and Transportable Observatory (CALLISTO). A logarithmic and periodic antenna with a gain of 7 dBi was designed and constructed locally using 6 m aluminum channels, to connect the spectrometer to observe the solar flares. This design has 18 dipoles and the overall height is around 6 m and covers the frequency range of 45 MHz to 600 MHz. The performance of the antenna is predicted with the software "EZNEC Ver. 5.0", antenna design software. Continuous monitoring of solar radio burst was started.

4.2.3 Investigate the H Alpha line profile of Be star HR 5149

B spectral type emission line stars (Be) are fast rotating stars which develops an accretion disk in the equatorial region of the star. Hydrogen lines in the visible spectrum, especially Hydrogen Alpha (H Alpha) line in the Balmer series is found to be in emission. When the accretion disk of a Be star happens to lie nearly on the line of sight of the observer the H alpha emission line appears with a central absorption, producing a double peak emission line. HR 5149 is a Be star whose intensity of the H alpha double peak profile has a periodic variation. The main objective of this research is to investigate the variations of the periodicity and the changes of flux ratio of the violet (V) peak and red (R) peak of H alpha line profile of HR 5149. 29 spectra were analyzed for V, R ratio by using image reduction facilities IRAF and Visual Spec. Correlation was found between the deviation of V and R peaks. It presently shows a V/R ratio periodicity of about 9 years (8.83 years). Research paper is being written on the study.

4.2.4 The collaborative astronomical research projects undertaken with the local Universities in the year 2012

(i) Determination of spectral parameters of few selected bright stars using spectrum synthesis method(University of Colombo)

In the past, spectral investigations were done by constructing curve of growth. Today, with more reliable theories and increase of computing power this was replaced by synthetic spectroscopy. Spectrum synthesis is a technique which uses known laws of physics with the right choice of input parameters to generate theoretical spectrum by computer. The observed spectrum is formed from flux contribution from over the entire visible surface of the star. If the model can provide a reliable description about the stellar atmosphere, then the properties of stars such as surface temperature, gravity, rotational velocity, chemical abundance and micro-turbulence velocity, derived by matching the observed and theoretical spectra will be a good representation of those for a real star. Several bright stars namely HD 38771, HD 35468, HD 74280, HD 34085, HD 114330, HD 50019, HD 56986, HD 26574, HD 30652, HD 34029, HD 62345, HD 93813, HD 80493, HD 39801 were observed in medium

resolution spectroscopy using the 45cm telescope at ACCIMT. Using Spectrum computer code and Kurucz model atmosphere files the stellar parameters were found for some of the observed stars. Project is completed.

(ii) Determination of orbital parameters of celestial objects

The orbit of solar system bodies can be determined from measurement of the object's position on the celestial sphere, Newtonian dynamics, and knowledge of the earth's orbit about the Sun. There are two classical methods to determine the orbit of a particular celestial object. Namely Gauss's method and Laplace's method. Laplace's method is easier to implement than Gauss's method and also Laplace's method has simple but better mathematical structure to estimate values of orbital parameters with less deviations with original values of orbital parameters. Therefore Laplace's method of orbit determination has been used for this project. One of main objectives of this Research Project was an attempt to predict a future orbital behavior of the considered asteroid and try to match it with real data provided by NASA/JPL and hence determine the accuracy of constructed mathematical model which was used to calculate orbital elements. The major expected result of the research is to predict and detect any collision factor of considered celestial object with planet Earth. As an test example the orbital parameters of the asteroid Ceres was computed using the CCD images taken through the 45cm telescope with different time intervals. It was found that the computed orbital parameters of the asteroid agree with that of provided by the NASA/JPL. Project is completed.

(iii).Determination of the atmospheric extinction data for observatory of the Arthur C Clarke institute (ACCIMT), Sri Lanka

The objective of this project is to determine the spectral extinction data of the telescope site of ACCIMT.

The readily available spectral response data of the CCD camera attached to the spectrograph of 45cm telescope at ACCIMT is also used for this extinction data calculation. Finally, the calculated spectral extinction data is used in IRAF for flux calibration of spectra of few observed bright stars. The standard star HD 114330 spectra were analyzed. Using IRAF, try to determine the revised extinction for the existing extinction data. Due to the insufficient air mass coverage of the observed data a new set of data was obtained. Data is being analyzed.

4.3 Research Work in RS/GIS

4.3.1 Urban Green spaces analysis for development planning in Colombo, Sri Lanka, utilizing THEOS satellite imagery - A Remote sensing and GIS approach

Urban Green Space Analysis was started utilizing the high resolution THEOS imagery acquired from Prof. Suvit Vibulsresth Founder executive director of the Geo Informatics and Space Technology Development Agency of Thailand. Population statistical data was acquired from the census department. Air quality indicator data was acquired from National Buildings Research Organization (NBRO). Normalized Digital Vegetation Index (NDVI) processing was completed and green spaces were extracted and analyzed with respect to population and Air quality indicators.

Completed the documentation of the project and a research paper was submitted to international journal of Urban Forestry and Urban Greening.

4.3.2 Identification of potential sites for National astronomical Observatory, Sri Lanka: An initial site survey using TIR Satellite Data.

The study was initiated to identify the potential locations for setting up a National Observatory for Sri Lanka. Thermal Infrared Images of the Kalpana 1 satellite were used for this analysis with the high temporal resolution. Satellite images are being downloaded. Time series analysis is being done.

4.3.3 Remote sensing based analysis of Urban Heat Islands (UHIs) with vegetation cover in Colombo city, Sri Lanka

Temporally distributed satellite imagery (LandSat ETM+) including the thermal band. Analyzed the LandSat thermal bands and identified temporally resistant areas with abnormally high temperatures. Identified green spaces covered with vegetation using the NDVI method utilizing the LandSat imagery. Heat Island formations of the Colombo municipal council area was identified and analyzed with respect to Green spaces in the area using LandSat imagery. Completed the documentation of the project and a research paper was submitted to international journal of Remote sensing and Remote sensing Letters.

4.4 Internal Capacity Building

The following measures of internal capacity enhancement/improvement were carried out during the year.

4.4.1 Development of Web portal and DBMS for STCF

The Space Technology Collaboration Forum (STCF) is an inter agency network for facilitating collaboration in space technology related applications mainly among the public sector institutions with the significant potential for the use of such applications in their work. In order to achieve the objectives of the forum ACCINT developed a web site (<http://www.accimt.ac.lk/stcf/Home.php>) for Information gathering and shearing between various participating public agencies.

Research institutes, Universities and individual collaborators. Web portal has been launched and Invitation letters has been sent. 16 collaborative partners have joined with the Space Technology Collaboration forum as of 31st December, 2012.

4.4.2 Improvements to Power Electronics Measurement Laboratory-Electronics & Microelectronics Division

Accreditation of the Surge Testing & Simulation Facility

The Surge Testing & Simulation Facility was granted accreditation by the Sri Lanka Accreditation Board in July 2012. In order to obtain the accreditation, the divisional staff successfully faced the pre assessment and the final audit.

Refurbishment of the electronics laboratory

The surge testing facility of the division was refurbished prior to the pre-assessment for granting accreditation.

Development of battery testing facilities

The divisional staff procured the required test & measuring instruments in order to carry out testing of Lead- Acid Starter batteries in accordance with SLS 1126 under the Import Inspection Scheme of Sri Lanka Standards Institution. The major instruments procured were a 6kVA DC Load, 02 numbers hot cupboards, digital thermometer, clamp meter and battery chargers.

The division also designed two numbers battery chargers for the battery testing facility.(14.5V/13A &16A)

Procurement of a RCCB Tester

With the objective of enhancing the test & measurement services offered by the division, the division studied relevant standards with regard to RCCB testing and initiated the procurement process.

4.4.3 Robotics Laboratory

The Robotics Laboratory activities were carried out with one assignment based engineer.

- Development of a controller and a new user-friendly interface for PUMA 562 six-axis robot manipulator.
The integration of the motor drive systems to a central embedded system carried out.
- Intermediate Workshop on Robotics was successfully completed with practical exposure to the participants.

4.4.4 Improvements to Astronomy Facilities of Arthur C Clarke Institute

Design and construction of a automated optical filter wheel assembly for the 45cm telescope

A filter wheel assembly had to be constructed to hold the optical filters which are used for obtaining scientific data through the 45cm telescope. Normally, a filter wheel holds several optical filters and the filters can be selected by rotating the filter wheel. The filter wheel assembly should be controlled through a standalone software interface running on Microsoft windows operating system or through the user interface of the CCD camera. A PIC microcontroller will be used to control filter wheel assembly and to communicate with the user interface in the computer. Circuit design, PCB fabrication and PIC microcontroller programming was completed. Filter controlling was tested and found successful. Remote control filter selection module is being developed. Project is about completion.

Construction of an optical adapter system to couple the H Alpha filter to the 103mm Vixen telescope and the Canon digital SLR camera

Design and develop a optical adapter system to couple the H Alpha filter to the 103mm Vixen telescope and the Canon digital SLR camera, locally.

4.4.5 ACCIMT LAN, Web, and related Network Services

Maintained the LAN, Internet, and E-mail services for the Institute.

4.4.6 In-house Software Development

The work undertaken by the IT division during the year to develop the in-house ICT facilities includes,

- Maintenance of the Payroll System with upgrades as and when required.
- Maintenance of the Attendance System with upgrades as and when required.
- Maintenance of the Accounts System with upgrades as and when required.
- Maintenance of the Vehicle Movement and Maintenance System with upgrades as and when required.
- Maintenance of the Invoice System with upgrades as and when required.
- Development of Space Technology Collaboration Forum (STCF) for the Space Application division of ACCIMT commenced in 2012. Design and development of database was started. Designing of several GUIs to register new member and ongoing projects, allow discussions among members, manage information on agencies and generated necessary reports were developed and installed.

4.4.7 Trouble-shooting and Repair Service for PCs/ Laptops/ Printers and UPSs of Non-Technical Divisions

Electronic & Microelectronic division provided trouble-shooting and repair support for office equipment used by non-technical divisions of ACCIMT by recovering faulty PCs/ Laptops/ Printers and UPSs.

5.0 Training Programmes Conducted by the Institute

The institute during the year conducted a variety of training programmes ranging from Continuing Professional Development (CPD) programmes, conducted on several subjects for practicing engineers, technicians and other professionals in the industry, to the basic and intermediate level technical training programmes on electronics, computer hardware etc. A number of training workshops were also conducted under "Vidatha" technology transfer programme, Viatha Restructuring Programme and "Divi Neguma" National Cottage Industry Programme.

5.1 Continuing Professional Development (CPD) Training Programmes for professionals

5.1.1 Modern Power Electronics

One CPD course was conducted for the benefit of the local industry, training 18 industry engineers/ technicians/ managers, earning an income of 180,000 rupees. The participants were given the knowledge and practical experience on modern electronic component families both analog and digital together with data conversion components.

5.1.2 Embedded Control Systems

This Continuing Professional Development Course was conducted for two batches during the year for a total of about 75 participants from the industry. These participants on their return do their own design solutions for the industry requirements using the knowledge acquired and the development kits supplied to them. The resource personnel have continuous guidance after following the course for them since it's an attempt to develop Sri Lankan products to the industry needs. The course is very much popular among the industry community today due to these special attributes. The institute also generated a revenue of Rs. 1,800,000/= from the above courses.

5.1.3 Modern Electronic Test & Measuring Instruments with Digital Emphasis (CPD course)

One CPD course was conducted for the benefit of the local industry, training 20 industry engineers/ technicians/ managers, earning an income of 300,000 rupees. The participants were given the knowledge and practical experience on usage, applications, advantages and limitations of modern electronic test and measuring instruments such as oscilloscopes, spectrum analyses, etc.

5.1.4 Spectrum Analyser and Vector Network Analyser Course

Independent Television Network requested for a specially designed course on the use of the above two equipment for their engineering staff to enhance their Radio Frequency measurement techniques know how coinciding with the RF combiner retuning (frequency reassigning) activity proposed by the Government to all FM broadcasting stations of the country. So a course consisting of site practical sessions was conducted for a group of 14 participants generating an income of Rs. 350,000.00.

5.1.5 Modern Electronic Components (CPD course)

One CPD course was conducted for the benefit of the local industry, training 35 industry engineers/ technicians/ managers, earning an income of 525,000 rupees. The participants were given the knowledge and practical experience on modern electronic component families both analog and digital together with data conversion components.

5.1.6 Workshop on Computer Diagnostic Tools to Sri Lanka Railways

Associated with the advanced hardware recovery work continued on Alstom AD32C locomotives (class M9) a request was made by Sri Lanka Railways (SLR) on the restoration of the Alstom diagnostic software to a new laptop, which is a must for the daily minor fault recording, event logging and variable (sensor signals) monitoring of the locomotive

control system for SLR technologists. The software usage know how was limited to most of the technologists at SLR. So a workshop had to be conducted with site applications (locomotive test runs) on the use of these diagnostic tools named WINSCOPE. A successful workshop was commenced for 10 technologists at SLR.

5.1.7 Programmable Logic Controller

This CPD type 5-day course was conducted for the benefits of engineers, technicians, managers and youth to get training on industry automation using programmable logic controller.

Course	No. of Participants	Duration	Income (Rs)
1. Programmable Logic Controller Course 2012 (1 st)	24	22 nd Jan. – 29 th Feb.	312,000/=
2. Programmable Logic Controller Course 2012 (2 nd)	17	08 th Sep. – 06 th Oct.	221,000/=
3. Programmable Logic Controller Course 2012(3 rd)	33	08 th Nov. – 30 th Nov.	429,000/=

5.1.8 Course on Networking and Linux Server Configuration

This 18-day Continuing Professional Development Course was completed for the first batch of participants during the year 2012 and another 16-day course was commenced in the 4th quarter of the year and continued to the following year. A total of 41 professionals from the industry participated generating a total income of Rs.7,45,000/=.

5.2 Basic and Intermediate Level Technical Training Programmes

5.2.1 Computer Hardware Engineering Course (CHEC-2011/ 2012)

This course which was started towards the end of the year 2011 was successfully completed during year 2012. This was the eighth batch with 50 students and generated revenue was about Rs. 600,000.00. The course content was reviewed this year for the growing technology advances in computer hardware. The course participants were school leavers, enthusiastic, teachers and professional interested in learning computer hardware. After the completion of this course the participants were issued with certificates.

5.2.2 Practical Electronic Course (PEC)

For the 18th time, the regular Practical Electronic Course was started with 110 participants towards the end of the year 2011 and was successfully completed during year 2012.. The course participants were school leavers, enthusiastic, teachers and professional interested in learning electronics.

The course was conducted successfully and the participants were issued with certificates. The revenue from the course was approximately Rs.1, 200,000/=.

5.2.3 Workshop on computer hardware essentials for non technical professionals – 04 days

Two such workshops were completed by the Communication Division to distribute the know how to 83 non technical office personnel in managing faults, troubleshooting of personal computer systems in the office environments. This activity generated an income of about Rs. 415,000.00

Workshop helps to develop following underpinning knowledge and skills.

- Introduction to Computers
- Knowledge of Microprocessors, Expansion Cards, Storage Devices, Key board & Mouse
- Understanding of Operating Systems
- Introduction & Functioning of peripheral devices such as Multimedia, Monitors, Scanners and Printers.
- Computer Networking system
- The methods of maintenance of Personal Computers & trouble shooting.

5.2.4 Mobile Phone Repairing

This six-day technical course was conducted by the Electronics Division for one batch during the year for a total of 33 participants engaged in repairing hand phones/ or interested in setting up their own mobile phone repair & service centers, earning an income of 264,000 rupees.

5.3 “Vidatha” Programmes

In contributing to the Vidatha Programme initiated by the Ministry of Technology & Research, the ACCIMT conducted the following workshops and training programmes during the year 2012.

A total of 396 potential entrepreneurs, channeled through the Ministry Technology and Research, received training under the said programmes during year 2012.

Workshop on Computer Hardware Engineering – 02 days

Workshop helps to develop following underpinning knowledge and skills.

- Introduction to Computers
- Knowledge of Microprocessors, Expansion Cards, Storage Devices, Key board & Mouse
- Understanding of Operating Systems
- Introduction & Functioning of peripheral devices such as Multimedia, Monitors, Scanners and Printers
- Computer Networking system
- The methods of maintenance of Personal Computers & trouble shooting

Workshop on TV Antenna Design – 02 day

Workshop helps to develop following underpinning knowledge and skills.

- Introduction of antennas

- All necessary information of manufacturing 500 MHz Corner Reflector Antenna & 200 MHz Yagi Antenna
- Introduction and design of Booster circuit

Workshop on Mobile Phone Repair – 02 days

Workshop helps to develop following underpinning knowledge and skills.

- Introduction to mobile phone communication systems
- Mobile phone troubleshooting hints
- Introduction to cellular communications principles
- Circuit analysis and troubleshooting of Mobile Phones

Workshop on Practical Electronics – 02 days

Workshop helps to develop following underpinning knowledge and skills.

- Introduction of Passive components
- The topologies of winding a 230V to 12V step down transformer
- Practical knowledge of manufacturing 12 V regulated power supply
- Introduction of FM theories
- Practically design a FM radio set
- Knowledge and practical experiences of Digital electronics

Workshop on TV and Radio Repair – 03 days

Workshop helps to develop following underpinning knowledge and skills

- Introduction of basic Electronics components
- Basic theories of Modulation & Demodulation
- Basic electronics modules in Radio & Television
- Practical enhancement of basic electronic modules & troubleshooting techniques of Black & White and colour TVs

	Name of Workshop	Number of workshops which held in 2012	Total number of participants
01	Computer Hardware Engineering	02	78
02	TV Antenna Design	02	62
03	Mobile Phone Repair	03	95
04	Practical Electronics	03	81
05	TV and Radio Repair	02	80
	Total	12	396

In addition, the ACCIMT conducted six workshops and trained 129 potential entrepreneurs under the Viatha Restructuring Programme, a special programme conducted by the Ministry of Technology and Research.

Special Programme in TV Repairing - 02 days

Aimed for people with good electronic knowledge and currently involved in Electronic equipment repair business preferably Television repairing.

- Introduction to basic electronic components

- Basic theories of Modulation & Demodulation
- Introduction to electronic modules in TV sets
- Practical knowledge related to basic electronic modules and troubleshooting
- Question and answer sections to address specific issues and problems

Programme on PCB Construction – 03 days

Aimed for people with good electronic knowledge and ability to identify electronic components. At the end of the programme the participants will be familiarized with circuit symbols and Orcad software.

The programme will cover schematic drawings and layout drawings of a circuit. Participants will be given hands on experience on PCB construction after drawing a layout. PCB construction will be done using screen printing. The participants will also be trained on building the circuits and testing for functionality.

Programme on Usage of Electronic Test and Measuring Equipment – 02 days

Aimed for people with good electronic knowledge and presently handle electronic test and measuring instruments.

The course covers a basic introduction on test and measuring instruments, functions and specifications, operation and trouble shooting. The participants will be given hands on experience in basic test and measuring instruments like millimeters, oscilloscopes and function generators.

Programme on Digital Electronics – 03 days

Aimed for people with good electronic knowledge and presently engaging in circuit design and manufacturing related work.

- Summary of basic electronic components and its usage
- Information on Digital IC families, Digital ICs, Logic Gates etc.
- Applications of Logic Gates / Truth Tables / Boolean Algebra / Combinational Logic Circuits
- Information on Flip Flops / Counters / Timers / Multiivibrators / Sequential Logic Circuits
- Introduction to Microcontrollers/Simple controller implementation using Microcontroller program.
-

	Name of Workshop	Number of workshops which held in 2012	Total number of participants
01	Special Programme in TV Repairing	01	19
02	Programme on PCB Construction	02	41
03	Programme on Usage of Electronic Test and Measuring Equipment	01	18
04	Pogramme on Digital Electronics	02	51
	Total	06	129

5.4 “Divi Neguma” National Cottage Industry Programme

In contributing to the “Divi Neguma” National Cottage Industry Programme, organized by the Ministry of Traditional Industries and Small Enterprise Development, the ACCIMT conducted following programmes for the beneficiaries.

	Name of Workshop and Duration	Number of workshops which held in 2011 and districts benefited	Total number of participants
01	Mobile Phone Repair (Six days)	02 Putlam, Gampaha, Monaragala, Kany, Ratnapura, Hambantota and Polonnaruwa	66
02	TV Antenna Design (Two days)	02 Putlam, Gampaha, Monaragala, Kany, Ratnapura, Hambantota Polonnaruwa an Matale	34

5.5 Training Programmes on Astronomy & Space Science

5.5.1 Two-day Workshop on Introduction to Astronomy

A two day workshop on introduction to Astronomy was conducted from 21st to 22nd December 2012. There were 86 participants for this workshop. Observing Sun in various filters, obtaining spectrum of Sun and bright stars, observing planets, nebulae, identifying constellations and making sextant to measure angular separation of stars were some of the practical conducted during this workshop.

Apart from the observational aspects in astronomy participants at this workshop were able to gain theoretical knowledge in astronomy through a series of lectures.

6.0 Science & Technology Popularization and Information Dissemination Programmes

6.1. Astronomy & Space science Popularization Programmes

6.1.1 Night Sky Observation Camps

With the idea of popularizing astronomy education in the country, night sky observation programs were organized, especially at schools in rural areas where clear dark night skies are available. During the observation program the students were able to view planets, nebulae, galaxies and deep sky objects through the modern astronomical telescope of ACCIMT taken to the observation site.

An introductory level lectures in astronomy were also delivered during the program. Lectures on usage of star constellations for navigation were delivered at Army training school at Welvetithurei, in Jaffna. Night sky observation session was followed. About 300 persons participated. Conducted Venus Transit observation for school children and general public. About 2000 people participated in this event.

6.1.2 Astronomy Lectures for School Children, University Students and Sri Lanka Forces

- Lectures and telescope demonstrations were conducted for about 2181 students and 162 teachers visited from 22 schools.
- Lectures and telescope demonstrations were conducted about 293 persons from Sri Lanka Navy visited ACCIMT.
- Lectures and telescope demonstrations were conducted about 100 persons from Military Police of Sri Lanka Army visited ACCIMT.

6.1.3 Public Observation Sessions and Other Astronomy Popularization Programmes

Public observation sessions on the Transit of Venus 6th June, 2012

The transit or passage of a planet across the face of the Sun is a relatively rare occurrence. As seen from Earth, only transits of Mercury and Venus are possible. The distance of Sun-Earth (AU) was historically calculated from the observations of Transit of Venus. Transit of Venus was observed successfully at Nilawelli beach, in Trincomale on 6th June, 2012. Timings of the 3rd and 4th contacts were recorded using the Ame Tim 10 video time inserter. Contact timings of Venus Transit observations made from different locations on the globe are needed to calculate the Astronomical Unit. No contact timing data is found from the international observations. Venus Transit observation session for general public was conducted. About 2000 students and general public viewed the Transit through the telescopes brought to the Nilawelli beach, Trincomale.

8th Annual Water Boost Rocket Competition

With a view to selecting a student to nominate for the International water boost rocket competition to be held Malaysia during 19th APRSAF annual meeting local Water Rocket Competition was held 21st July 2012 at Moratuwa university grounds. 34 student s with their teachers participated in this year's competition. The competition was conducted according to the rules stipulated by APRSAF.

Poster competition organized by APRSAF

Organized local Poster competition under the theme of "The next 50 years in Space" among school children and selected the best 3 posters for the international competition. The contest was open for participation by children in Asia-Pacific region at the age from 8 up to 11 years old.

6.1.4 Astronomical Information and Space Science Dissemination for Schools

Information on astronomy and space science were disseminated among 76 students. Astronomy Information was provided for two A/L individual projects.

6.2 ACCIMT Library

ACCIMT Library and Information Division functions as a special library and consists a fair collection of books, periodicals and other educational materials in the fields of Communications, Information technology, Electronics, Photonics, Robotics and Space Technology.

The objective of the library is to facilitate and provide information to professionals and personnel engaged in Research and Development projects, graduates and postgraduates students to accelerate the introduction of modern technologies.

6.2.1 Library Collection

The Library has a fair collection of very expensive specialized reports and publications with frequent updates obtained from reliable and independent organization both in and out of the country. The Library consist of handbooks, data libraries, user surveys, product guidelines, application notes, design-oriented text books, state-of-art reviews, encyclopedias, dictionaries, directories, VHS, VCDs, DVDs, CD-ROM data bases and standards etc. Also, The specific magazines allocated to Communication, Information Technology, Space Technologies, Electronics are available in the periodical section.

Total collection:-

Books	-8664
CD-ROMs	-745
Video Tapes	-368
Audio Tapes	-94
VCDs	-130
DVDs	-87

New Acquisitions

Books	-79
CD ROMS	-04
VCD	-01
DVDs	-02

6.2.2 Services

(a) **Lending & Reference Facilities :-** ACCIMT staff and trainees.

(b) **Reference Facilities :-** Visiting lecturers and instructors, graduate and postgraduate students engaged in projects, Continuing Professional Development (CPD) course participants, and Personal and Institutional membership.

(c) **Reader Services :-** Photocopying service, Scanning facility, Internet facility, Electronic

Library facility, Inter library loan, Current Awareness Services, Information and document supply service, and Online catalogue..

- (d) **Service to Community** :- Membership to the professionals in the public and private industrial sectors, Information & document supply service for professionals & scholars (a. Industrialists. b. University academic & researchers. c. General public with a special interest.), providing display items for exhibitions and Astronomy promoting programs, and information dissemination service

6.2.3 **Free On-Line Access to the ACCIMT Library via Internet <http://www.accimt.ac.lk>**

Those who wish to get the information about the ACCIMT can access the ACCIMT on-line catalogue, Open Public Access Catalogue (OPAC) through the internet (www.accimt.ac.lk). Computers are also provided for our clients to search and access the library collection via our LAN. Client can search for materials by Author, Title or Key words.

6.3 **Exhibitions**

The Institute participated in a number of public exhibitions including the National Engineering Exhibition 'Techno 2012' organized by the Institution of Engineers and the Exhibition organized by the Ministry of Technology and Research at Open University Regional Center at Jaffna. In addition, the Institute attended to the following exhibitions organized by the Ministry of Traditional Industries and Small Enterprise Development under Divi Neguma National Cottage Industry Programme.

	District	Dates
1	Mannar	21 st / 22 nd of January
2	Hambantota	3 rd / 4 th of March
3	Ratnapura	10 th / 11 th of March
4	Kandy	17 th / 18 th of March
5	Bataloa	31 st of March / 1 st of April
6	Polonnaruwa	28 th / 29 th of April
7	Kilinochchi	26 th / 27 th of May
8	Badulla	2 nd / 3 rd of June
9	Vauniya	9 th / 10 th of June
10	Matale	16 th / 17 th of June
11	Galle	30 th of June / 1 st of July
12	Trincomalee	7 th / 8 th of July
13	Mulathivu	28 th / 29 th of July
14	Nuwara-Eliya	6 th / 7 th of October
15	Kalutara	13 th / 14 th of October
16	Matara	20 th / 21 st of October
17	Kurunegala	10 th / 11 th of November

Further to that, the institute was represented at the following exhibitions and events.

	Exhibition / Event	Dates
1	"Eheliyagoda Central Collage", Eheliyagoda	11 th to 14 th of January
2	"Defence Services Collage", Colombo	26 th to 28 th of January
3	"Esala Udana 2012" Hali Ela National School	1 st to 4 th of August
4	"Hedunuwewa Central Collage", Kothmale	21 st / 22 nd September

6.4 Special Events

6.4.1 Arthur C Clarke Memorial Lecture- 2012

A memorial lecture was organized on the 19th March 2012 at the Bandaranaike Center for International Studies to mark the fourth anniversary of the demise of Sri Lankabhimannya Sir Arthur C Clarke, the founder patron of the institution. The lecture was delivered by Prof. Suvit Vibulsresth, Founder - Executive Director of the Geo-Informatics and Space Technology Development Agency of Thailand.

The lecture, entitled "Geo-informatics for Natural Resources Survey of Developing Countries in Asia", was attended by a large audience of policy makers, senior public officials, Engineers, Scientists, academia and other professionals.

7.0 Publications

The Space Application Division contributed 02 research papers to journals as per following references:

- (i) Looking below the ground: Prediction of Tuber indicum habitat using the Weights of Evidence method, Xue-Qing Yang, Centre for Mountain Ecosystem Studies, Kunming Institute of Botany, Chinese Academy of Sciences, 650201 Kunming, China, Gayantha R.L. Kodikara, Space Applications Division, Arthur C Clarke Institute for Modern Technologies, Katubedda, Moratuwa, Sri Lanka, Eike Luedeling, World Agroforestry Centre (ICRAF), Nairobi, Kenya, Xue-Fei Yang, Pei-gui Liu, Key Laboratory of Biodiversity and Biogeography, Kunming Institute of Botany, Chinese Academy of Sciences, 650201 Kunming, China, Jun He, Jian-Chu Xu, World Agroforestry Centre, Kunming 650201, China, Ecological Modelling, Vol 247, Pages 27- 39, 2012.
- (ii) Prospect of Using Geographic Information Technology in the Public Health Sector of Sri Lanka, I. P. Senanayake, Gayantha R. L. Kodikara, Space Applications Division, Arthur C. Clarke Institute for Modern Technologies, Sri Lanka, B. Y. A. Wijayanayake,

The Space Application Division submitted 03 research papers as per following details and are currently under review:

- (i). Research paper titled "Urban Green spaces analysis for development planning in Colombo, Sri Lanka, utilizing THEOS satellite imagery - A Remote sensing and GIS approach" was submitted to international journal of Urban Forestry and Urban Greening.
- (ii). Research paper titled "Remote sensing based analysis of Urban Heat Islands (UHIs) with vegetation cover in Colombo city, Sri Lanka" was submitted to international journal of Remote sensing and Remote sensing Letters.
- (v). Research Paper titled "Spectral mapping of morphological features on the moon with MGM and SAM" was submitted to the journal of *Advances in Space Research (ASR)*

The Space Application Division contributed 01 research paper to the Proceedings of Young Scientists Forum (YSF) Symposium, 18th January 2013, Hector Kobbekaduwa Agrarian Research and Training Institute, Colombo 8, Sri Lanka as per following details:

G G. R. L. Kodikara, I. P. Senanayake, W. D. D. P. Welivitiya, P. M. Nadeeka, A. R. M. Rila, Space Applications Division, Arthur C Clarke Institute for Modern Technologies, Katubedda, Moratuwa, Sri Lanka., Machine learning approach to extract information from high resolution multispectral data: a feasibility study.

8.0 Internal Human Resource Development

Staff Position

Scheme of Recruitment & promotion approved by Department of Management Services letter dated on 19/11/2012, DMS/E2/62/4/287

During the year under review eleven new appointments were done. They are ten Research Engineers and one Research Scientist. Seven members of the staff were resigned. They were five Research Engineers, one Book keeper and one Receptionist/Telephone operator. Total cadre for the year 2012 is 152.75 positions were filled and 77 positions were vacant. Details were given in Annex I.

Post Graduate Degree / Professional Development Courses / Workshops

The institute has provided training to staff members by giving them opportunities to follow post Graduate Degree, Professional Development Courses/ and to participate in workshop, training programs, etc. The summary of training courses are given below.

9.0 Official Overseas Visits -2012

Name and Designation of Officer		Purpose of Visit	Duration	Country
1.	Prof. L D K B Gamage, Chairman	Attend the 22 nd UJN/IAF workshop on Space Technologies Applied to the needs of Humanity: Experiences from Cases in the Mediterranean Area and 63 rd International Astronautical Congress"	26/9/2012 - 7/10/2012	Italy
2.	Prof. L D K B Gamage, Chairman	Launch of Supreme Sat - 1	22/11/2012 - 23/11/2012	China
3.	Eng. P S Panawennage, Director & Chief Executive Officer	Attend the 17 th Meeting of the Board of Governors of the Centre for Space Science and Technology Education in Asia and the Pacific	20/11/2012 - 21/11/2012	India
4.	Eng. P S Panawennage, Director & Chief Executive Officer	16 th session of the Intergovernmental Consultative Committee (ICC) on Regional Space Applications Programme for Sustainable Development	17/12/2012 - 20/12/2012	Thailand
5.	Eng. P S Panawennage, Director & Chief Executive Officer	Intergovernmental Meeting on Asia Pacific Years of Action for Systems for Disaster Risk Reduction and Sustainable Development	18/12/ 20-20/12/2012	India
6.	Mrs. K Ediriweera, Head of Technical	International Training Course on Small Satellite Missions	28/10/2012- 10 /11/2012	India
7.	Mrs. P D C Janashanthi, Electronics Engineer	Equipment Training on Electrical Multifunction Calibrator	12/6/2012 - 17/6/2012	Singapore
8.	Mr. A Chinthaka Ranawaka Technical Officer	Training on " Diploma in Advanced Mobile Communication Technologies"	12/3/2012 - 18/5/2012	Bangalore, India
9.	Mr. S Welikala, Manager Industry Relations	Participation at the Malaysian Technology Development Workshop	2/12/2012 - 7/12/2012	Malaysia
10.	Mr. Indishe Senanayake, Research Scientist	Training Course on " Navigation and Satellite Positioning System"	18/6/2012 - 13/7/2012	Ahmedabad, India
11.	Mr. J Adassuriya, Research Scientist	To follow a Post Graduate Diploma Course at Physical Research Laboratory, India	1/8/2012- 30/4/2012	Ahmedabad, India
12.	Mr. G R L Kodikara, Research Scientist	Participation at the ASEAN Regional Forum Space Security Workshop	5/12/2012 - 8/12/2012	Vietnam
13.	Mr. P K P Piyal Anuruddha, Technical Officer	Equipment Training on Electrical Multifunction Calibrator Equipment	12/6/2012 - 17/6/2012	Singapore

Overseas Visits (private) - 2012

	Name & Designation of Officer	Purpose of Visit	Duration	Country Visited
1.	Prof. L D K B Gamage, Chairman	Private Visit	15/9/2012- 18/9/2012	Australia
2.	Prof. L D K B Gamage, Chairman	Private Visit	28/9/2012 - 5/10/2012	Thailand
3.	Prof. L D K B Gamage, Chairman	Private Visit	5/11/2012 - 14/11/2012	Jamaica
4.	Prof. L D K B Gamage, Chairman	Private Visit	17/12/2012 -26/12//2012	Malaysia
5.	Mrs. L R N Somathilake, Senior Systems Analyst	Private visit	25/8/2012 -10/9/2012	India
6.	Mrs. M A D C Medagama, Accountant	Private Visit	9/3/2012 - 24/3/2012	India
7.	Mrs. H C Weerasekera,Secretary	Private Visit	9/3/2012 - 24/3/2012	India
8.	Mr. J K Jayawardena, Senior Research Engineer	Private Visit	24/12/2012- 8/12/2012	Bangkok
9.	Mr. P D S Pushpakumara, Research Scientist	Private Visit	24/12/2012 - 8/12/2012	Bangkok
10.	Mr. G D N Silva, Technical Officer	Private Visit	24/12/2012- 8/12/2012	Bangkok

ANNEX I

CADRE POSITIONS AND VACANCIES – As at 31st December 2012

No	Designation	Designation	Salary Code	Approved Cadre up to 2013*	Approved Cadre for 2012	Existing Cadre 31-12-'12	No. of Vacancies As at 31-12-'12	No. of vacancies to be filled in 2013
1.	Director	Director (CEO)	HM 2-3	01	01	01	-	-
2.		Professor (Senior)/ Professor/ Senior Fellow/ Fellow	HM 2-3 HM 2-2 HM 1-3	07	02	-	02	05
3.		Addl. Dir. (Space Technology)	HM 2-2	01	-	-	-	01
4.	Head of Technical	Addl. Dir. (Tech. & Op.)		01	01	01	-	-
5.		Addl. Dir. (Planning & Devp.)		01	01	-	01	-
6.	Executive Secretary	Addl. Dir. (Admin. & Finance)		01	01	01	-	-
7.	Principal Research Engineers	Principal Research Engineers	HM 2-1	07	04	01	03	03
8.	Principal Systems/Software Engineer	Principal Systems/Software Engineer				-		
9.	Principal Electronics Engineer	Principal Electronics Engineer				-		
10.	Principal Research Scientist	Principal Research Scientist		01	01	-	01	-

11.	Senior Electronics Engineer	Senior Electronics Engineer	HM 1-3	13	11		09	02
12.	Senior Research Engineer	Senior Research Engineer				02		
13.	Senior Systems/Software Engineer	Senior Systems/Software Engineer						
14.	Senior Research Scientist	Senior Research Scientist		01	01	-	01	-
15.	Senior Systems Analyst	Senior Systems Analyst		01	01	01	-	-
16.		Senior Dpty. Director (Electronics)		01	01	-	01	-
17.		Senior Dpty. Director (Communication)		01	01	-	01	-
18.		Senior Dpty. Director (IT)		01	01	-	01	-
19.		Senior Dpty. Director (Industrial Services)		01	01	-	01	-
20.		Senior Dpty. Director (Industrialization)		01	01	-	01	-
21.		Senior Dpty. Director (Space Tech.)		01	01	-	01	-
22.		Senior Dpty. Director (Space Tech. App.)		01	01	-	01	-
23.		Senior Dpty. Director (Astronomy)		01	01	-	01	-
24.		Senior Dpty. Director (Robotics)		01	01	-	01	-
25.	Financial Controller	Senior Dpty. Director (Finance)		01	01	01	-	-
26.	Electronics Engineers	Electronics Engineers	AR 1 (Gr. II – Gr. I) Or AR 2	30	23	-	10	07
27.	Research Engineers	Research Engineers				13		
28.	Systems/Software Engineers	Systems/Software Engineers						
29.	Research Scientists	Research Scientists		08	08	07	01	-
30.	Systems Analyst /Programmer	Systems Analyst		02	02	02	-	-
31.	Media/Public Relations Officer	Asst./ Dpty. Director (Media)	MM 1-1 (Gr. II – Gr. I)	01	01	01	-	-
32.	Administrative Officer	Asst./ Dpty. Director (Admin)		01	01	01	-	-
33.		Asst./ Dpty. Director (H.R.)		01	01	01	-	-
34.		Librarian		01	01	01	-	-
35.	Manager-Industry Relations	Asst. /Dpty. Director (Industrial)		01	01	01	-	-
36.	Accountant/Asst. Accountant	Accountant		01	01	01	-	-
37.	Internal Auditor ((Higher/Lower)	Internal Auditor		01	01	01	-	-
38.	Confidential Secretaries	Confidential Secretaries	JM 1-2 (Gr. II – Gr. I)	03	03	02	01	-
39.		Administrative Officer		01	01	-	01	-
40.		Accounts Officer		01	01	-	01	-
41.		Training Officer		01	01	-	01	-
42.		Engineering Asst.		06	05	-	05	01
43.		Programmer		03	03	-	03	-
44.		Asst. Maintenance Engineer		01	01	-	01	
45.	Works Superintendent	Works Superintendent	MA 2-2 (Gr. III)	01	01	01	-	-
46.	Technical Officer (Gr. I – II)	Technical Assistant		20	18	09	09	02

47.	Book Keeper – (Grade I – III)	Book Keeper	– Gr. I)	01	01	--	01	-
48.	Secretary (Gr. I – II)	Management Assistant	MA 1-2 (Gr. III – Gr. I)	22	22	12	10	-
49.	Stenographer (Gr. I – II)							
50.	Clerk (Grade I – IV)							
51.	Computer Application Assistant (Grade IV)							
52.	Receptionist/ Telephone Operator (Gr. I-II)							
53.	Library Assistant							
54.	Storekeeper (Grade I – III)							
55.	Driver – (Higher/Lower)	Driver	PL 3 (Gr. III – Gr. I)	08	08	05	03	
56.	Lab Attendant- (Special/Higher/Lower)	Lab Attendant	PL 2 (Gr. III – Gr. I)	08	05	05	-	03
57.	Labourer/Peon	Office Aide	PL 1 (Gr. III – Gr. I)	07	07	04	03	
58.	Plumber/Electrician	Plumber/Electrician	PL 3 (Gr. III – Gr. I)	01	01	--	01	
Total				176	152	75	77	24

New Appointments, Promotions, Resignations and Retirements

	Subject	No.	Name	Designation	Date
1. 1	New Appointments	11	Mr K K R S Ranaweera	Research Engineer – (AR 1 – Gr. II)	02/01/2012
			Mr I P Senanayake	Research Scientist – (AR 1 – Gr. II)	01/03/2012
			Mr I P Senanayake	Research Engineer – (AR 1 – Gr. II)	01/06/2012
			Mr W D D P Welivitiya	Research Engineer – (AR 1 – Gr. II)	01/06/2012
			Mr A R Mohommed	Research Scientist – (AR 1 – Gr. II)	01/06/2012
			Mr S R B Herath	Research Engineer – (AR 1 – Gr. II)	01/06/2012
			Mr W R S C Ranathunga	Research Engineer – (AR 1 – Gr. II)	01/06/2012
			Ms P M Nadeeka	Research Engineer – (AR 1 – Gr. II)	02/07/2012
			Ms J A S N Jayasooriya	Research Engineer – (AR 1 – Gr. II)	02/07/2012
			Mr U D Niriella	Research Engineer – (AR 1 – Gr. II)	02/07/2012
			Ms K G Lakmali	Research Engineer – (AR 1 – Gr. II)	02/07/2012
			Mr W R W M Y S B Bulumulla	Research Engineer – (AR 1 – Gr. II)	15/08/2012
2. 2	Promotions/ Internal Recruitment	--	None		
3. 3	Renewal of	01	Mr S A Welikala	Manager, Industry Relations	03/12/2012

	Contracts (on fixed term contract basis)				to 02/12/2013
4.	Resignations	07	Mrs. M H K Fernando Ms. K N Lakmali Ms. H A S Shiromini Mrs. D R R L Dissanayake Mrs. D T Kumanayake Mr S R B Herath Mr K K R S Ranaweera	Receptionist/Telephone Operator – Gr. I Research Engineer – Gr. IV Bookkeeper – Gr. III Research Engineer – (AR 1 - Gr. II) Research Engineer – Gr. IV Research Engineer – (AR 1 - Gr. II) Research Engineer – (AR 1 - Gr. II)	30/04/2012 30/04/2012 10/05/2012 14/05/2012 20/08/2012 28/09/2012 30/09/2012
5.	Retirements (50 years of age completed.)	01	Mrs A R Fernando	Clerk – Grade I	31/12/2012

ANNEX II

Completed Training Programmes for the year 2012

No	Name	Course	Duration	Institute
01	Mr.Sanath Panawennage	Financial Reporting in Public Enterprises	02 days	Academy of Financial studies
02	Mrs.S.A.Godamunne	Financial Reporting in Public Enterprises	02 days	Academy of Financial studies
03	Mr.J.S.B.Ratnayake	Internal Auditing	02 days	Academy of Financial studies
04	Mr.Sanath Panawennage	Workshop on “Commercializing Modern Scientific Research & Technology transfer”	01 day	Sri Lanka Association for the Advancement of Science (SLAAS)
05	Mr.S.P.K.K.A.Liyanage	Post Graduate Diploma in Library & Information Science	02yrs	National Institute in Library & Information Science-Colombo Univ.
06	Mr.Sanath Panawennage	International Conference on “ Clean &Green Energy”	01 day	The Institute of Engineering & Technology
07	Mr.S.P.K.K.A.Liyanage	International Conference on “Library & Information Science”	01 day	Sri Lanka Library Association
08	Mr.J.S.B.Ratnayake	Seminar on “ Effective Internal Auditing “	01 day	Skills Development Fund Ltd.
09	Mr.Sanath Panawennage	Discussion on “How to minimize audit query in Government Institutes “	01 day	Sri Lanka Foundation
10	Mrs. P.D.C. Janashanthi	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
11	Mr. R.A.S.S. Gunasekara	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
12	Mrs. L.R.N. Somathilaka	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
13	Mr. B.A. Jayasinghe	Workshop On “Writing of	01 day	ACCIMT (University of

		Project Proposals”		Moratuwa)
14	Mr. J.K. Jayawardana	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
15	Mrs. J. P.S. Athuraliya	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
16	Mr. N.I. Madagangoda	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
17	Mr. P.D.S. Pushpakumara	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
18	Mr. R.P. Dasanayake	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
No	Name	Course	Duration	Institute
19	Mrs. R.M.L. N. Rathnayake	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
20	Mr. T.C. Pieris	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
21	Mr. N.T.M. Sajith	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
22	Ms. T.V. Jayasinghe Arachchi	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
23	Ms. M.L. Karunarathne	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
24	Mr. L.K.G.G. Kodikara	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
25	Mr. K.K.R. Salika Ranweera	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
26	Mr. I.P. Senanayake	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
27	Mr. W.D.D.P. Welivitiya	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
28	Mr. A.R.M. Rila	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
29	Mr. W.R.S.C. Ranathunga	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
30	Ms. P.M. Nadeeka	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
31	Ms. J.A.S.N. Jayasooriya	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
32	Mr. U.D. Niriella	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
33	Mr. K.G. Lakmali	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
34	Mr. R.W.M.Y.S. Bulumulla	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)

No	Name	Course	Duration	Institute
35	Mr. C.M. Karunarathne	Workshop On “Writing of Project Proposals”	01 day	ACCIMT (University of Moratuwa)
36	Mrs. G.H.C. Jayarani	Training on “Disciplinary Procedure”	03 days	National Institute of Labour Studies
37	Mr. U.D. Niriella	Training on “ Internal Auditing of Laboratory Management Systems “	02 days	Sri Lanka Accreditation Board

38	Mr. P.S. Panawennage	Workshop On “ Soft Skills Development”	01 day	
39	Mr. W.A.P. Silva	Workshop On “ Soft Skills Development”	01 day	
40	Mrs. S.A. Godamune	Workshop On “ Soft Skills Development”	01 day	
41	Mrs. K. Ediriweera	Workshop On “ Soft Skills Development”	01 day	
42	Mrs. P.D.C. Janashanthi	Workshop On “ Soft Skills Development”	01 day	
43	Mr. B.A. Jayasinghe	Workshop On “ Soft Skills Development”	01 day	
44	Mr. J.K. Jayawardana	Workshop On “ Soft Skills Development”	01 day	
45	Mr. S.W.D.C.K. Wijewardane	Workshop On “ Soft Skills Development”	01 day	
46	Mr. S. Walikala	Workshop On “ Soft Skills Development”	01 day	
47	Mr. S.P.K.K.A. Liyanage	Workshop On “ Soft Skills Development”	01 day	
48	Mrs. D.R.D. De Silva	Workshop On “ Soft Skills Development”	01 day	
49	Mrs. V.K. Aluthge	Workshop On “ Soft Skills Development”	01 day	
50	Mr. P.D.S. Pushpakumara	Workshop On “ Soft Skills Development”	01 day	
51	Mr. R.P. Dasanayake	Workshop On “ Soft Skills Development”	01 day	
No	Name	Course	Duration	Institute
52	Mrs. G.H.C. Jayarani	Workshop On “ Soft Skills Development”	01 day	
53	Mr. L.K.G.G. Kodikara	Workshop On “ Soft Skills Development”	01 day	
54	Mr. W.D.D.P Welivitiya	Workshop On “ Soft Skills Development”	01 day	
55	Mr. U.D Niriella	Workshop On “ Soft Skills Development”	01 day	
56	Mr. M.P.L. Chandrasiri	Workshop On “ Soft Skills Development”	01 day	
57	Mrs. A. Weerawarnasuriya	Workshop On “ Soft Skills Development”	01 day	
58	Mr. J.A.K. Jayakody	Workshop On “ Soft Skills Development”	01 day	
59	Mrs. T.M.S.S.P. Cooray	Workshop On “ Soft Skills Development”	01 day	
60	Mrs. N.M. Kandamby	Workshop On “ Soft Skills Development”	01 day	
61	Mr. S.P. Athuluwage	Workshop On “ Soft Skills Development”	01 day	
62	Mrs. N.P. Katipearachchi	Workshop On “ Soft Skills Development”	01 day	
63	Mrs. M.L.A.N. Pushparani	Workshop On “ Soft Skills Development”	01 day	
64	Mr. P.K.P. Anuruddha	Workshop On “ Soft Skills Development”	01 day	
65	Mrs. P.M.K.A. Bandara	Workshop On “ Soft Skills Development”	01 day	

		Development”		
66	Mr. G.D.N. De Silva	Workshop On “ Soft Skills Development”	01 day	
67	Mr. N.K.L.T.M.S Dias	Workshop On “ Soft Skills Development”	01 day	
68	Mr. S.R.S. Rupasinghe	Workshop On “ Soft Skills Development”	01 day	
No	Name	Course	Duration	Institute
69	Mr. J.R.T.N. Jayakody	Workshop On “ Soft Skills Development”	01 day	
70	Mr. R.A.C.A.K. Ranawaka	Workshop On “ Soft Skills Development”	01 day	
71	Mr. N.B. Micheal	Workshop On “ Soft Skills Development”	01 day	
72	Mr. P. Thilakasiri	Workshop On “ Soft Skills Development”	01 day	
73	Mr. R. Fernando	Workshop On “ Soft Skills Development”	01 day	
74	Mr. H.M. Sunil	Workshop On “ Soft Skills Development”	01 day	
75	Mr. N.D.N. Kumara	Workshop On “ Soft Skills Development”	01 day	
76	Mr. G.K.S. Perera	Workshop On “ Soft Skills Development”	01 day	
77	Mr. M.A.K. Dharmalal	Workshop On “ Soft Skills Development”	01 day	
78	Mr. P.L.S. Kumara	Workshop On “ Soft Skills Development”	01 day	
79	Mr. P.K. S.N. Pasqual	Workshop On “ Soft Skills Development”	01 day	
80	Mr. S.P.K.K.A. Liyanage	National Institute of Library and Information Science (NILS) 2012 Symposium	02 days	National Institute of Library and Information Science
81	Mrs. S.A. Godamunne	Financial Reporting in Compliance with Accounting Standards	02 days	Skills Development Fund Limited
82	Mrs.M.A.D.C.Madagama	Financial Reporting in Compliance with Accounting Standards	02 days	Skills Development Fund Limited

10.0 Staff Grade Employees-2012-12-31

S/No	Name	Designation
1.	Eng. S Panawennage	Director
2.	Mrs. K Ediriweera	Head of Technical
3.	Mr. W A P Silva	Executive Secretary
4.	Mrs. S A Godamunne	Financial Controller
5.	Mrs. J P D S Athuraliya	Principal Research Engineer
6.	Mr. J K Jayawardena	Senior Research Engineer
7.	Mrs. L N Ratnayake	Senior Research Engineer
8.	Mrs. L R N Somathilake	Senior Systems Analyst
9.	Mrs. P D C Janashanthi	Electronic Engineer-Gr.1
10.	Mr. B A Jayasinghe	Software Engineer- Gr.1
11.	Mr. R A S S Gunasekera	Research Scientist-Gr.1
12.	Mr. S A Welikala	Manager, Industry Relations (Cont.)
13.	Mr. R P Dasanayake	Systems Analyst-Gr.1
14.	Mr. S P K K A Liyanage	Librarian –Gr.1
15.	Mrs. M A D C Medagama	Accountant
16.	Mr. E M G M B Ekanayake	Administrative Officer-Grade 1
17.	Mrs. G HC Jayarani	Administrative Officer-Grade 1
18.	Mr. C K Wijayawardena	Media Officer
19.	Mr. J Addassuriya	Research Scientist-Grade II
20.	Mr. N I Medagangoda	Research Scientist-Grade IV
21.	Mr. T C Peiris	Research Scientist-Grade IV
22.	Mr. P D S Pushpakumara	Research Scientist-Grade IV
23.	Mr. J S B Ratnayake	Internal Auditor
24.	Mrs. Dilkusha De Silva	Confidential Secretary
25.	Mrs. V K Aluthge	Confidential Secretary
26.	Mr. N T M Sajith	Research Engineer (AR 1-Gr.II)
27.	Ms. T V Jayasinghe Arachchi	Research Engineer (AR 1-Gr.II)
28.	Mr. C M Karunarathna	Research Engineer (AR 1-Gr.II)
29.	Ms. M L Karunarathna	Systems Analyst (AR 1-Gr.II)
30.	Mr. L K Gayantha Roshana	Research Scientist (AR 1-Gr.II)
31.	Mr. I P Senanayake	Research Engineer (AR 1-Gr.II)
32.	Mr. W D D P Welivitiya	Research Engineer (AR 1-Gr.II)
33.	Mr. A R M Rila	Research Scientist (AR 1-Gr.II)
34.	Mr. W R S C Ranatunga	Research Engineer (AR 1-Gr.II)
35.	Ms. P M Nadeeka	Research Engineer (AR 1-Gr.II)
36.	Ms. J A S N Jayasooriya	Research Engineer (AR 1-Gr.II)
37.	Mr. U D Niriella	Research Engineer (AR 1-Gr.II)
38.	Ms. K G Lakmali	Research Engineer (AR 1-Gr.II)
39.	Mr. W R W M Y S B Bulumulla	Research Engineer (AR 1-Gr.II)

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES

Public Sector Entity - Statement of Financial Position as at 31st December 2012

	NOTE	2012 Rs.000s	2011 Rs.000s
ASSETS			
Current Assets			
Cash and Cash Equivalents	1	13,286	29,086
Trade and Other Receivables	2a&b	43,054	38,164
Inventories / Stocks	3	10,237	10,127
Prepayments	4	1,617	1,084
		<u>68,194</u>	<u>78,461</u>
Non - Current Assets			
Investments	5	4,550	4,182
Property , Plant and Equipment	6	115,919	91,989
		<u>120,469</u>	<u>96,171</u>
Work - in Progress - Construction	6A	24,543	
Total Assets		<u>213,206</u>	<u>174,632</u>
LIABILITIES			
Current Liabilities			
Payables	7	5,503	5,040
Accrued Expenses	8	6,392	1,995
		<u>11,895</u>	<u>7,035</u>
Non - Current Liabilities			
Deferred Income	9	11,315	16,015
Provision for Gratuity	10	14,961	14,405
		<u>26,276</u>	<u>30,420</u>
Total Liabilities		<u>38,171</u>	<u>37,455</u>
Net Assets		<u>175,035</u>	<u>137,177</u>
NET ASSETS / EQUITY			
	12		
Capital contributed by Govt		187,862	164,698
Reserves		67,220	64,826
Accumulated Surplus/(Deficit)		<u>(80,047)</u>	<u>(92,347)</u>
Total Net Assets / Equity		<u>175,035</u>	<u>137,177</u>


Director


Financial Controller

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES

Public Sector Entity - Statement of Financial Performance for the Year Ended 31st December 2012

	2012 Rs.000s	2011 Rs.000s
Revenue		
Recurrent Grant	69,460	53,158
Other Revenue	36,641	18,355
Revaluation on disposed Motor Vehicles	2,025	
Amortization	16,413	13,805
Total Revenue	<u>124,539</u>	<u>85,318</u>
Expenses		
Personal Emoluments	48,935	38,766
Travelling Expenses	1,692	1,171
Supplies & Requisites	3,936	5,505
Depreciation	16,413	13,805
Repairs & Maintenance	4,322	4,514
Transportation, Communication Utility & Other Services	13,981	8,276
Project Expenses	16,283	9,119
Other Operating Expenses	297	584
Total Expenses	<u>105,860</u>	<u>81,740</u>
Surplus / (Deficit) for the period	18,680	3,578

Income & Expenditure Appropriation Account for the Year Ended 31.12.2012

Surplus / (Deficit) for the period	18,680	3,578
Transfer of surplus out of generated funds from P/C a/c	(6,379) (Note 11)	(5,584)
Net Surplus/(Deficit) for the period	<u>12,300</u>	<u>(2,006)</u>
Prior Year Adjustment -TG		(4,258)
Prior Year Adjustment -P/C		(103)
Net Surplus/(Deficit) for the period	<u>12,300</u>	<u>(6,367)</u>

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES

Public Sector Entity - Statement of Changes in Net Assets / Equity for the Year Ended 31st December 2012

Rs.000s

	Govt. Capital Grant	General Reserve	Celltel Donation	R & C Fund	Foreign Grant	Re-Valuation Surplus	Other Grants & Donations	Revolving Fund	Directors Fund	FINDS Grant	NASDA Grant	Accumulated Surplus/ (Deficit)	Total
Balance as at 1st Jan 2011	154,502	273	213	1,068	3,464		23,773	1,066	739	3,809	441	(85,980)	103,368
Grants received	24,000												24,000
Amortization	(13,804)												(13,804)
Gain on Fixed Assets Revaluation						29,608							29,608
Fixed Assets/Tools							91						91
Depreciation							(523)						(523)
Other Receipts								765	30	13			808
Interest Income											2		2
Expenses								(1)	(5)				(6)
Surplus for the period												(6,367)	(6,367)
Balance as at 31st Dec 2011	164,698	273	213	1,068	3,464	29,608	23,341	1,830	764	3,822	443	(92,347)	137,177

Balance as at 1st Jan 2012	164,698	273	213	1,068	3,464	29,608	23,341	1,830	764	3,822	443	(92,347)	137,177
Grants received	23,727												23,727
Amortization	(16,413)												(16,413)
Gain on Fixed Assets Revaluation						(2,025)							(2,025)
Fixed Assets/Tools	15,850						3,204						19,054
Depreciation							(839)						(839)
Other Receipts				273				1,780					2,053
Interest Income													0
Expenses													0
Surplus for the period												12,300	12,300
Balance as at 31st Dec 2012	187,862	273	213	1,341	3,464	27,583	25,706	3,610	764	3,822	443	(80,047)	175,034

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES

Indirect Method Cashflow Statement

Consolidated Cashflow Statement for the Year Ended 31st December 2012

	2012 Rs.'000s	2011 Rs'.000s
Cash flows from operating activities		
Surplus/(deficit) from ordinary activities	12,300	(6,367)
Non-cash movements		
Depreciation	16,413	13,805
Amortization	(16,413)	(13,805)
Revaluation / W/off adj		4,136
Increase in payables	4,860	3,385
Increase in provisions relating to employee costs - Gratuity	556	1,724
Increase in other current assets	(643)	(16,847)
Decrease in receivables	(4,890)	4,146
Deferred revenue	(4,700)	10,082
Interest income	(1,516)	(1,114)
Deficit on disposal of property plant & equipment		2
Net cash flows from operating activities	5,967	(853)

	2012 Rs.000s	2011 Rs.000s
Cashflow from Investing Activities		
Purchase of plant and equipment	(41,183)	(20,854)
proceeds from disposal of f.a		68
Fixed assets received on grants	840	91
Work-in -Progress	(24,543)	

Capital investments on other financial assets	(368)	(282)
Changes in grants	2,394	804
Interest income	1,516	1,114
Net cash flows from investing activities	<u>(61,344)</u>	<u>(19,059)</u>
Cashflow from Financing Activities		
Capital grant	39,577	24,000
Net Cash flows from financing activities	<u>39,577</u>	<u>24,000</u>
Net increase/(decrease) in cash and cash equivalents	(15,800)	4,088
Cash and cash equivalents at beginning of period	29,086	24,998
Cash and cash equivalents at end of period	<u>13,286</u>	<u>29,086</u>

Accounting Policies

1. Corporate Information

1.1 Domicile and Legal Form

Arthur C Clarke Institute for Modern Technologies is a statutory body established by the Science and Technology Development Act no 11 of 1994. The registered office of the Institute is located at Bandaranayake Mawatha , Katubedda , Moratuwa .

1.2 Principle Activities and Nature of Operations

The functions of our Institute shall be

- (1) To accelerate the introduction of modern technologies to Sri Lanka by
 - (a) Initiating, promoting and conducting research and development in the application of modern technologies
 - (b) Providing research and development support to the Government and private sector undertakings in the application of modern technologies, and
 - © Training of personnel in modern technologies to meet the needs of Government , and private sector undertakings, and

to promote future studies

in this Act the expression “ modern technologies “ includes new materials ,communication and related sciences, information technology , electronics , micro –electronics , photonics , robotics and space technology.

1.3 The Number of Employees

The number of employees at the end of the year was 76

2. Accounting policies

2.1 General

The Financial Statements of Arthur C Clarke Institute for Modern Technologies have been prepared on historical cost basis in accordance with **Sri Lanka Accounting Standards for Small and Medium –Sized entities (SLFRS for SMEs)** which are applied consistently. Income and expenditure are on accrual basis and recorded in the Financial Statements of the period where appropriate and are explained in the following notes.

2.2 Post Balance Sheet Events

All material post Balance sheet events have been considered and where necessary adjustments have been made and disclosures have been made in these financial statements.

2.3 Assets and Bases of their Valuation

2.3.1 Property, Plant & Equipment

Property, plant & equipment are recorded at cost less accumulated depreciation. The cost of property, plant & equipment is the cost of purchase or construction together with any incidental expenses thereon

The land value is not stated in the financial statements since land is a property of Ministry of Higher Education and transferred to Ministry of Science and Technology to carry out the activities of ACCIMT. If ACCIMT operations will not be continued the land should be handed over to the University of Moratuwa as per the MOU signed between University of Moratuwa and ACCIMT.

The depreciation is provided at the following rates for each category

	Per Annum %
Building	5%
Satellite Antenna, Computers, Lab equipment	10%
Office Equipment, Furniture & Fittings	10%
Motor Vehicles	20%
Library Books	15%

2.4 Inventories

Inventories consists of stationery stock items and electronic components, accessories and tools etc. The inventories are valued at cost or net realizable value which ever is lower.

2.5 Receivables

Receivable are stated at the amounts they are estimated to realize.

2.6 Investments

Investments in Treasury Bills have been stated at cost .Income from such investments have been accounted on accrual basis

2.7 Cash and Cash Equivalents

Cash and cash equivalents comprise of cash in hand, balances of various bank accounts and investment of surplus funds in Treasury Bills.

Cash flow Statement

Cash flow statement has been prepared using the indirect method in accordance with Sri Lanka Accounting standard 7 (LKAS 7)

2.8 Liabilities and Provisions

All known liabilities as at the date of financial position included in the Financial Statement and adequate provisions are made for liabilities which are known to exist but the amount of which cannot be determined accurately .

Liabilities classified as current liabilities in the date of financial position are those obligations payable on demand or within one year from the date of financial position Items classified as non –current liabilities are those obligations which expire beyond a period of one year from the date of financial position.

2.9 Deferred Liabilities

- 2.9.1 Provision has been made in the financial statements for retiring gratuity, which may fall due for payment under the payment of Gratuity Act No 12 of 1983 in accordance with Sri Lanka Accounting standard 19 “Employee Benefits “for all employees who have completed more than one year of continuous service with the Institute .The Gratuity Liability is not externally funded or actuarially valued. This item is grouped under non current Liabilities in the statement of financial position.

2.9.1 Defined Contribution plan

All employees are eligible for provident fund contribution and trust fund contribution covered by relevant contribution funds in line with the relevant status. Employer’s contributions to the defined contribution plans are recognized as an expense in the income statement when incurred.

2.10 Taxation

ACCIMT is registered for Value added tax (VAT) The income received for projects and other earnings are liable to VAT payments except income generated from courses. In addition to that Nation Building Tax (NBT) and Stamp Duty collection are sent to Department of Inland revenue periodically.

2.11 Capital Commitments and Contingent Liabilities

All material commitments and contingent liabilities are considered and where necessary adjustments or disclosures are made in these financial statements.

2.12 Income Recognition

Revenue from products and services are measured at the fair value of consideration received.

2.13 Disbursement of surplus income of projects

The surplus of income on projects undertaken over and above of the normal quantum of activities in the annual action plan has been disbursed in accordance with the public Finance Circular No 380 applicable for universities and research institutions.

2.14 Interest Income

Interest income of the Institute is recognized on accrual basis.

2.15 Expenditure Recognition

2.15.1 Revenue Expenditure

The surplus earned by the Institute as shown in the statement of the financial performance is after providing for all known liabilities and for depreciation of property plant & equipment.

2.15.2 Capital expenditure

Expenditure incurred for the purpose of extending or improving assets of a permanent nature by means to carry on the operations or for the purpose of increasing the earning capacity of the institute is treated as capital expenditure

2.16 Comparative Figures

The comparative figures have been arranged where necessary to conform to the current presentation.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES

Detailed Financial Performance for the Year Ended 31st December 2012

2011 Rs.		2012 Rs.	2012 Rs.
<u>Revenue</u>			
53,158,000.00	Govt. Grant - Recurrent		69,460,000.00
6,026,500.00	Course Fees	5,520,000.00	
7,999,022.52	Project Income / Consultancy Income	21,937,623.74	
1,118,635.22	Vidatha Income	1,687,644.65	
	Divi Neguma Inome	2,757,545.82	
808,679.96	Interest Income from Treasury Bills	1,185,653.74	
305,483.57	Interest Income	330,763.97	
88,000.00	Tender Deposits	259,000.00	
1,940,730.48	Sundry Income	861,560.28	
68,305.00	Income from Disposal of Fixed Assets	2,101,361.60	
	Revaluation on disposed Motor Vehicles	2,025,000.00	
13,804,648.24	Amortization	16,413,307.76	55,079,461.56
85,318,004.99	Total Revenue		124,539,461.56
<u>Expenses</u>			
Personnel Emoluments			
29,992,390.20	Salaries & Wages	36,037,294.96	
751,196.69	Overtime & Holiday Pay	776,531.38	
175,600.00	Allowance to Board Members	256,000.00	
1,602,898.33	Other Allowances	4,843,157.00	
3,544,940.08	E.P.F.	5,099,399.91	
709,561.33	E.T.F.	1,019,997.28	
1,989,946.38	Gratuity	902,263.50	48,934,644.03
38,766,533.01			
Travelling Expenses			
632,514.22	Travelling - Local	891,950.06	
538,615.63	Travelling - Overseas	800,236.86	1,692,186.92
1,171,129.85			
Supplies & Requisites			
601,348.60	Stationery & Office Requisites	847,517.02	
1,063,807.11	Fuel	1,033,564.78	
23,518.39	Mech & Elect Goods / Lab Components	86,886.93	
141,022.60	Uniforms	103,486.00	
41,577.26	Periodicals	53,989.05	
646,850.00	Welfare Items	805,409.25	

2,986,876.64	Exhibitions & Seminars	1,005,295.45	3,936,148.48
5,505,000.60			
2011		2012	2012
Rs.		Rs.	Rs.
	Repairs & Maintenance		
994,506.11	Buildings	1,998,469.05	
1,522,938.11	Equipment	920,566.36	
1,996,846.60	Motor Vehicles	1,403,211.12	
13,804,648.24	Depreciation	16,413,307.76	20,735,554.29
18,318,939.06			
	Transportation, Communication Utility & Other Services		
1,172,579.87	Telephone	1,187,382.15	
77,440.00	Postage	106,467.00	
49,859.29	Bank Charges	36,520.00	
1,264,261.05	Insurance	1,878,369.66	
391,910.40	Advertisement	1,126,988.80	
82,079.00	Hospitality & Entertainment	119,664.80	
1,092,593.04	Security	1,853,024.55	
1,011,616.05	Other Expenses	1,577,706.80	
2,753,217.50	Electricity	3,531,948.74	
310,723.40	Water	461,509.79	
69,746.95	Expenses of Disposal of Fixed Assets	2,101,361.60	13,980,943.89
8,276,026.55			
	Project Expenses		
7,963,030.24	Courses/Projects	12,153,792.78	
	Divi Neguma	2,473,806.71	
1,155,827.22	Vidatha	1,655,266.46	16,282,865.95
9,118,857.46			
	Other Operating Expenses		
79,835.66	Membership Fees	117,997.65	
504,076.12	Staff Training	179,451.25	297,448.90
583,911.78			
81,740,398.31	Total Expenses		105,859,792.46
3,577,606.68	Surplus / (Deficit) for the period		18,679,669.10

(1) Cash & Cash Equivalents

	Rs.
Bank of Ceylon - C/A 7054733	1,483,853.88
Bank of Ceylon - C/A 307144	752,640.11
FINDS Bank A/c - S/A 326764	321,958.92
NASDA Bank A/c - S/A 328391	42,504.41
Directors Fund Bank A/c - C/A 307399	64,221.76
Revolving Fund Bank A/c- C/A 2479737	2,215,122.54
Fuel Imprest	45,049.03
Board Members Imprests	15,900.00
Invest. of surplus funds in Treas.Bills - Projects/Courses Fund	5,903,586.13
Invest. of surplus funds in Treas.Bills - Directors Fund	826,694.48
Invest. of surplus funds in Treas.Bills - Revolving Fund	1,614,140.22
	<u>13,285,671.48</u>

(2a) Trade and Other Receivables

	Rs.	
Staff Debtor - TG	2,965.00	(Schedule 2a.1)
Insurance Corporation Debtor	9,700.00	
Accounts Receivable - TG	663,678.34	(Schedule 2a.2)
Accounts Receivable - P/C	16,554,941.28	(Schedule 2a.3)
Debtor - Miss K.N.Lakmali	130,669.06	
Debtor - Mr P T Fernando	4,000.00	
Debtor - Mr K.K.R.S.Ranaweera	23,889.12	
Debtor - Mrs.D.R.R.L.Dissanayake	33,047.50	
Debtor - Mr.Jayathu Fernando	106,894.72	
Debtor - Mr B R P Perera	115,699.66	
Debtor - Miss H.A.S.Shiromini	5,000.00	
Other Deposits	155,315.00	(Schedule 2a.4)
R.S.Debtor	14,434.91	
Elections Dept	8,159.60	
Ministry Debtor - Dish TV Package	33,381.50	
Festival Advance	74,500.00	(Schedule 2a.5)
Staff Loans	7,333,403.00	(Schedule 2a.6)
Motor Cycle Loan	654,368.00	(Schedule 2a.7)
Motor Vehicle Loan	1,999,445.00	(Schedule 2a.8)
Mobilization Advance	3,070,354.13	
TG Control	446,632.68	
	<u>31,440,478.50</u>	

(2b) Trade and Other Receivables

Work-In-Progress

	Rs.
<u>Courses</u>	
Introduction to Robotic Applications (Comm Div)	87,143.10
MEC 2012 Course	111,854.87
Computer Hardware for professionals (CHEP 01)	60,790.00
Computer Hardware for professionals (CHEP 02)	43,537.31
CNLA 2012 / 02	121,795.75
Vidatha Digital Electronics 2012/02 (1st to 3rd Dec)	215,083.75
Vidatha TV & Radio repairing 2012/01(8th & 9th Dec)	87,636.50
Vidatha PCB Constrution 2012/02 (14th to 16th Dec)	111,645.75
PLC 3rd 8th Nov - 30th Nov '12	67,221.60
Astronomy Workshop 21st & 22nd Dc '12	98,147.00
	1,004,855.63

Projects

RS - GIS Project	2,050.00
Traffic Light System	2,797.57
Telescope Project	2,751.10
Hardware Recovery Feasibility Session - IFS (Comm Div)	295,391.09
Solar Street Lamp - MOST (Electr. Div)	92,245.77
Robotics Laboratory Project (Comm Div)	90,637.38
RFID Library Automation - ACCIMT (Comm Div)	87,884.36
University of Buddhist Pali - Homagama (IT Div)	70,933.38
Wireless Irrigation Automation Project (Electronic Div)	45,108.21
Post Graduate Institute of Mgt - Payroll System (IT Div)	24,730.35
Tea Colour Separator Project (Comm Div)	3,326,555.09
Recovery of ClassM9 LPM - PM2011-8(SL Railway, Comm Div)	1,322,829.04
RCM9 PM 2011 - 07 Railway Project (Comm Division)	1,243,048.80
Traffic Light System (Inhouse) (Electronic Division)	421,826.02
Data Base for D. Neguma Prog. - Ministry of TI&SED (IT Div)	1,140.00
Sri Lanka Railway 2011 - 09 CCS (Comm Div)	106,157.18
Sri Lanka Railway CCS 2011 - 10 (Comm Div)	28,189.00
Sri Lanka Railway RM 9 2012- 12 (Comm Div)	2,111,062.68
2011 WCDT Railway	196,568.85
Imagine/Telemedicine Project	219,570.08
Display Project for Air Lanka Cargo	12,840.59
2012 14 ITN Project	87,790.50
Library System for Sri Lanka Buddhist University	18,513.00
CEB Project at Norochcholi	190,863.52
Street Light Controller Project - CMC	14,669.71
Hardware Recovery of Jingle Boxes HRJB	53,575.19
Battery Testing Project 2012 - 03	31,117.00
Battery Testing Project 2012 - 04	33,060.00
Surge Protection Testing Wing Super Capacitor	12,574.00
2012 - 13 NWSDB	397,045.62

Callisto Radio Spectrometer	64,958.55
Atomic Energy Authority	175.00
	<u>10,608,658.63</u>

Total (2a+2b) 43,053,992.76

(3) Inventories/Stocks

	Rs.
Electronic Components	4,513,958.13
Stationery	1,200,592.65
Others	282,067.12
Electrical & Mechanical	153,926.48
Welfare	63,779.64
Accessories -TG	199,218.03
Inventory Items - TG	518,035.98
Inventory Items - Projects (P/C)	1,990,378.52
Tools - TG	1,315,023.94
	<u>10,236,980.49</u>

(4) Prepayments

	Rs.
Pay-in Adv - TG	1,548,446.27
Pay-in Adv - P/C	48,000.00
Stamp Imprest	20,637.00
	<u>1,617,083.27</u>

(5) Investments

	Rs.
Invest. of surplus funds in Treas.Bills - FINDS Grant	4,083,692.00
Invest. of surplus funds in Treas.Bills - NASDA Grant	466,707.00
	<u>4,550,399.00</u>

(6) Property , Plant & Equipment

	Cost as at 01.01.12	Additions during the year	Disposals during the year	Total as at 31.12.12	Cum Dep as at 01.01.12	Depn during the year	Transfer of Depn charged on Disposals	Cum Dep as at 31.12.12	W D V as at 31.12.12 ^a
Buildings	46,905,582.39	935,142.01		47,840,724.40	9,277,323.02	2,392,036.22		11,669,359.24	36,171,365.16
Satellite Antenna	2,959,797.83	-		2,959,797.83	2,808,942.09	45,112.00		2,854,054.09	105,743.74
								-	
Computers	41,346,522.61	5,622,034.89		46,968,557.50	27,163,441.54	3,163,080.02		30,326,521.56	16,642,035.94
				-	-			-	
Lab Equipment	113,565,717.21	16,369,655.10		129,935,372.31	84,214,953.41	6,127,015.66		90,341,969.07	39,593,403.24
				-	-			-	
Office Equipment	18,399,622.79	1,190,573.90		19,590,196.69	11,510,402.26	982,793.11		12,493,195.37	7,097,001.32
Furniture & Fittings	7,508,977.21	552,909.45		8,061,886.66	6,432,232.29	290,667.92		6,722,900.21	1,338,986.45
				-	-			-	
Motor Vehicles	14,498,389.00	15,850,000.00	2,025,000.00	28,323,389.00	12,669,629.22	3,973,696.80	2,025,000.00	14,618,326.02	13,705,062.98
Library Books	22,696,484.63	662,741.72		23,359,226.35	21,815,659.92	278,374.16		22,094,034.08	1,265,192.27
				-	-			-	
	267,881,093.67	41,183,057.07	2,025,000.00	307,039,150.74	175,892,583.75	17,252,775.89	2,025,000.00	191,120,359.64	115,918,791.10

Motor Vehicles includes 02 nos. Motor Vehicles given by the General Treasury.

Rs.

Van WP NB 1743	9,100,000.00
Car WP KR 6987	6,750,000.00
	<u>15,850,000.00</u>

Depreciation has been provided on original cost or valuation on a straight line basis consistent with that of previous year, and is calculated to write off the asset over their estimated useful lives.

Rates at which the depreciation is provided are as follows.

Buildings	5%
Satellite Antenna, Computers, Lab Equipment	10%
Office Equipment, Furniture & Fittings	10%
Library Books	15%
Motor Vehicles	20%

(6A) WIP - Buildings under construction

	Rs.
WIP Buildings	24,437,550.50
WIP Salvage Room	105,413.20
	<u><u>24,542,963.70</u></u>

(7) Payables

	Rs.
Accounts Payable -TG	57,975.00
Accounts Payable - P/C	7,500.00
Salaries & Wages Control	14,507.30
E.P.F.Control	737,856.19
E.T.F.Control	88,542.68
Creditor - General Treasury	84,965.00
Refundable Deposit	369,746.00
VAT Payable on receipts - T.G	18,000.00
VAT Payable on receipts - P/C	1,280,753.90
NBT Payable - P/C	227,034.54
Mr. B R P Perea's D.Loan recovery from Mr. S Rupasinghe	49,395.00
Mr. B R P Perea's D.Loan Interest recovery from Mr. S Rupasinghe	5,276.20
Stamp Duty Payable - TG	6,825.00
Paye Tax Payable - TG	99,102.16
PC Control	446,632.68
Retention on payments to Ruwan Traders	2,009,338.53
	<u><u>5,503,450.18</u></u>

(8) Accrued Expenses

	Rs.
Treasury Fund	6,141,799.43
Projects/Courses	249,945.33
	<u><u>6,391,744.76</u></u>

(9) Deferred Revenue

Rs.
<u><u>11,315,000.00</u></u>

(10) Provision for Gratuity

Rs.
<u><u>14,961,180.00</u></u>

(11) Analysis of Income & Expenditure Appropriation Account

Description	Income	12% VAT	3%, NBT 2% NBT	Stamp Fees	Input Tax Recovered	Net Income	Expenditure	10% Retention	Surplus	Surplus General Treasury 20%	Utilities 5%	Indirect Staff 15%	Rs. Direct Staff
													60%
Modern Electronic Test & Measuring Instrument 2011-01 (Electronics Division - April 2011)	30,000		600	25		29,375			29,375	5,875	1,469	4,406	17,625
Battery Testing Project Q1 (Electronics Division - Jan - March 2012)	199,349	21,359	3,490	75		174,425	18,775		155,650	31,130	7,783	23,348	93,390
Battery Testing Project Q2 (Electronics Division - April - June 2012)	308,448	33,048	5,400	100		269,900	12,237		257,663	51,533	12,883	38,649	154,598
Test & Measuring Instrument with Digital Emphasis (Electronics Division - May 2012)	300,000		6,000	125		293,875	72,127		221,748	44,350	11,087	33,262	133,049
Modern Power Electronic 2011 (Electronics Division - Jan 2012)	180,000		3,600	75		176,325	39,399		136,926	27,385	6,846	20,539	82,156
Orel Manufacturing (Pvt) Ltd Project (Electronics Division)	91,392	9,792	1,600	50		79,950	2,500		77,450	15,490	3,873	11,618	46,470
10% retension R-S9-PC Railway Project (Communications Division)	381,500					381,500			381,500	76,300	19,075	57,225	228,900
Sri Lanka Railway RM9 864-867 Project (Invoice No:2193,2194,2450 to 2453,2599 to 2601, 2620 to 2624) (Communications Division - 2010 - 2012)	9,297,187	993,086	172,100	125	201,493	8,333,369	2,618,310	718,600	4,996,458	1,224,114	249,823	1,423,938	2,098,583
Programmable Logic Controller Course(PLC 3rd) 2011 SIAF - 111	156,000		3,120	25		152,855	30,254		122,602	24,520	6,130	18,390	73,561
(ISD - July 2012)	10,943,876	1,057,285	195,910	600	201,493	9,891,574	2,793,602	718,600	6,379,372	1,500,697	318,969	1,631,375	2,928,331

(12) Net Assets / Equity

	2012 Rs.		2011 Rs.
Government Capital Grant			
Opening Balance	164,697,443.66		154,502,091.90
Grants received	39,577,429.00		24,000,000.00
Amortization	(16,413,307.76)	*	(13,804,648.24)
	<u>187,861,564.90</u>		<u>164,697,443.66</u>
Reserves			
General Reserve	272,721.64		272,721.64
Celltel Donation	213,333.34		213,333.34
Research & Consultancy Fund	1,341,446.90		1,068,019.55
Foreign Grant	3,464,295.25		3,464,295.25
Re - valuation Surplus	27,582,504.54		29,607,504.54
Other Grants Donation			
Opening Balance	23,341,365.17		23,773,161.24
Fixed Assets received	3,204,509.96		91,234.55
Depreciation	(839,468.13)	**	(523,030.62)
Tools received	-		-
	<u>25,706,407.00</u>		<u>23,341,365.17</u>
Revolving Fund			
Opening Balance	1,830,247.31		-
Receipts	1,779,873.65		765,877.27
Expenses	-		(1,100.24)
	<u>3,610,120.96</u>		<u>764,777.03</u>
Directors Fund			
Opening Balance	764,220.86		739,090.00
Receipts	-		30,000.00
Expenses	-		(4,869.14)
	<u>764,220.86</u>		<u>764,220.86</u>
FINDS Grant			
Opening Balance	3,821,958.47		3,809,333.19
Interest Income	-		12,625.28
Expenses	-		-
	<u>3,821,958.47</u>		<u>3,821,958.47</u>

NASDA Grant		
Opening Balance	442,503.96	440,838.96
Interest Income	-	1,665.00
	<u>442,503.96</u>	<u>442,503.96</u>
	<u>67,219,512.92</u>	<u>63,760,699.81</u>

Capital Grants received includes the cost of 2 nos vehicles received amounting to Rs.15,850,000.00

	2012	2011 Rs.
Accumulated Surplus/(Deficit)		
Opening Balance -TG	(102,417,340.76)	(94,955,758.65)
Opening Balance - P/C	10,070,472.61	8,975,600.37
Excess of income over expenditure	12,300,297.19	
	<u>(80,046,570.96)</u>	<u>(85,980,158.28)</u>
Total Net Assets / Equity	<u>175,034,506.86</u>	<u>142,477,985.19</u>
	18,679,669.10	
	6,379,371.91	
	<u>12,300,297.19</u>	

Capital grant received has been amortized according to the Sri Lanka Accounting Standard No.24.

Depreciation on items received on donations/grants

Depreciation on item received under donations/grants have been adjusted to the donations/grants accounts as per the instructions given by the Treasury.



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கணக்காய்வாளர் தலைமை அறிப்பி திணைக்களம்
AUDITOR GENERAL'S DEPARTMENT



මගේ අංකය
எனது இல.

LS/H/ACCIMT//FA/2012

My No

ඔබේ අංකය
உமது இல
Your No.

දිනය
திகதி
Date } 23 September 2013

Director

Arthur C Clarke Institute for Modern Technologies

13.0 Report of the Auditor General on the Financial Statements of the Arthur C Clarke Institute for Modern Technologies for the year ended 31 December 2012 in terms of Section 14 (2) (c) of the Finance Act, No. 38 of 1971.

The audit of financial statements of the Arthur C Clarke Institute for Modern Technologies for the year ended 31 December 2012 comprising the statement of financial position as at 31 December 2012 and the statement of financial performance, statement of changes in equity and cash flow statement for the year then ended and a summary of significant accounting policies and other explanatory information was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read in conjunction with Section 13 (1) of the Finance Act, No. 38 of 1971 and Section 40(3) of the Science and Technology Improvement Act, No. 11 of 1994. My comments and observations which I consider should be published with the Annual Report of the Institute in terms of Section 14 (2) (c) of the Finance Act appear in this report. A detailed report in terms of Section 13 (7) (a) of the Finance Act was issued to the Director of the Institute on 29 May 2013.

1;2 Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Generally Accepted Accounting Principles and for such internal control as the management determines is necessary to enable the preparation of financial statements that are free from material misstatements, whether due to fraud or error.

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වත්තරමුල්ල, ශ්‍රී ලංකාව

இல. 306/72, பொல்துவ வீதி,
பத்தரமுல்லை இலங்கை

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1:3 Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Sri Lanka Auditing Standards. Those Standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Institute's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Institute's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements. Sub-sections (3) and (4) of the Section 13 of the Finance Act, No. 38 of 1971 give discretionary powers to the Auditor General to determine the scope and extent of the audit.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my qualified audit opinion.

1.4 Basis for Qualified Audit Opinion

My opinion is qualified based on the matters described in paragraph 2.2 of this report.

2. Financial Statements

2:1 Qualified Opinion

In my opinion, except for the effects of the matters described in paragraph 2.2 of this report, the financial statements give a true and fair view of the financial position of the Arthur C Clarke Institute for Modern Technologies as at 31 December 2012 and its financial performance and cash flows for the year then ended in accordance with Generally Accepted Accounting Principles.

2.2 Comments on Financial Statements

2.2.1 Best Accounting Practices

The following matters were observed.

- (a) The work in progress amounting to Rs.10,608,659 that should be shown under work in progress had been classified under trade and other receipts.
- (b) Even though the revaluation reserve amounting to Rs.2,025,000 relating to motor vehicles that were sold should have been shown under deferred income, it had been shown under the income for the year and as such, the net profit of the Institute had increased by Rs.2,025,000.

2.2.2 Accounting Deficiencies

The following observations are made

- (a) The Savings Bank balance of the NASDA and FINDS Projects as at the end of the year under review had been understated in the statement of financial position and cash flow statement by Rs.14,891. Further, there was no transaction during the year under review in the accounts of those projects.

- (b) The value of 7 projects and 5 courses amounting to Rs.2,203,040 completed during the year 2012 had been shown in the work in progress account.

2.2.3 Unreconciled Control Accounts

An unexplained difference of Rs.166,125 was observed between the value shown in the statement of financial position as Nation Building Tax (NBT) as at 31 December of the year under review and the value shown in the Tax Return submitted to the Department of Inland Revenue as at that date.

2.2.4 Accounts Receivables and Payables

The following observations are made.

(a) Accounts Receivables

Even though a sum of Rs.2,630,652 had been spent by the Institute during the year under review for Divineguma Programme, out of that, a sum of Rs.2,473,806 had only been shown in the debtors balance as amount recoverable due to spending Rs.156,846 for unauthorized items .

(b) Accounts Payable

Deposits repayable amounting to Rs.226,980 remaining over 05 years had been shown in the account balances payable and action had not been taken to recover it.

2.2.5 Lack of Evidence for Audit

Evidence for the following items had not been presented for audit.

- (a) Stock verification reports relating to the value of utilities amounting to Rs.10.2 million shown in the statement of financial position.
- (b) An income amounting to Rs.9.7 million had been obtained from two projects in the Department of Railway in the year under review. Information relating to agreement entered into with the Department of Railway in this regard, deployment of utility materials and labour hours expected and utilized.

2.2.6 Non-compliances with Laws, Rules, Regulations and Management Decisions

The following non-compliances were observed in audit.

Reference to Laws, Rules, Regulations and Management Decisions	Non-compliance
(a) Section 21 of the Value Added Tax Act No.14 of 2002	Information relating to the Value Added Tax amounting to Rs.1,153,752 payable to the Department of Inland Revenue had not been disclosed in the Tax Return.
(b) Financial Regulations	
(i) F.R. 104	Investigations had not been carried out in respect of vehicle accidents and copies of preliminary and final reports had not been submitted to the Auditor General.

- (ii) F.R 110 Register of Losses and Damages had not been maintained.
- (iii) F.R. 371
- (i) Ad-hoc sub imprests granted in 24 instances for various purposes had been settled after delaying for a period ranging from 20 days to 124 days.
 - (ii) Ad-hoc sub imprests had been granted during the year under review for various purposes without proper estimation and as such, money ranging between 25 per cent and 61 per cent had been saved and retained in hands in 32 instances from the imprest granted after completion of activities and settled subsequently.
- (iv) F.R 757 (2) Copies of the Boards of Survey for the year under review had not been submitted to the Auditor General.
- (v) F.R. 802 and 1647(e) A Register of Vehicles had not been maintained.
- (c) Circular
-
- (i) Treasury Circular No.842 dated 19 December 1978 Register of Fixed Assets had not been maintained in terms of Circular provisions and specific format in respect of fixed assets amounting to Rs.99.3 million shown in the statement of financial position.

- | | |
|--|--|
| (ii) Treasury Circular
No.IAI/2002/02 dated
28 November 2002 | Register of Computer Fixed Assets had not been maintained in terms of Circular provisions in respect of computers and accessories thereon amounting to Rs.16.6 million shown in the statement of financial position. |
|--|--|

3. Financial Review

3.1 Financial Results

The operation of the Institute for the year under review had resulted in a surplus of Rs.18.7 million as compared with the surplus of Rs.3.6 million in the previous year, thus indicating an increase of Rs.15.1 million in the financial results. Increase of Government grant by Rs.16.3 million had mainly attributed for increase of this financial results.

3.2 Analytical Financial Review

Internal income and expenditure thereon for the year under review had increased by Rs.22.9 million and Rs.24.1 million respectively as compared with the preceding year with regard to the increase of financial results. Increase of external project income, disposal of fixed assets, profit on revaluation of motor vehicles by Rs.17.2 million, Rs.2 million and Rs.2 million respectively had mainly attributed for increasing income and increase of personnel emolument, repair and maintenance expenditure, expenditure such as transport, communication, auxiliary services etc. and external project expenditure by Rs.10.16 million, Rs.2.41 million, Rs.5.7 million and Rs.7.16 million had mainly attributed for increase of expenditure.

4. Operating Review

4.1 Performance

The following observations are made.

- (a) Even though 68 activities had been targeted under 05 various divisions of the Institute according to the Annual Action Plan, out of them, 19 activities had not been completely carried out.
- (b) A sum of Rs.466,707 from the NASDA project had been invested in Treasury Bills. Further, there were very less activities from the funds of the NASDA and FINDS whereas sums of Rs.826,694 and Rs.4,083,692 respectively received thereon had been invested in Treasury Bills.
- (c) Even though the period of the existing lease agreement relating to the communication tower of the Institute leased out to the Telecommunication Regulatory Commission of Sri Lanka was expired from 31 January 2010, a fresh agreement had not been entered into up to now. The lease income receivable from the year 2010 up to the year under review had not been recovered. It had not been disclosed in the financial statements.
- (d) Even though the surplus earned from the research and development consultancy services shown in paragraph 7.1 of the Public Finance Circular No.380 dated 19 January 2000 should have been credited to a Treasury Special Fund and utilized for research and facility improvement, contrary to this, this fund had been invested in Treasury bills from several years. According to the statement of financial position of the year under review, amount invested as such was Rs.5.9 million.

4.2 Management Inefficiencies

The following matters were observed.

- (a) Even though there were 08 vehicles of the Institute in running condition, a sum of Rs.686,488 had been paid during the year under review as external vehicle hire charges.
- (b) Even though a 50 per cent advance of Rs.48,000 had been granted to a private institution in the year 2010 for construction of lamp posts, it had not been settled even up to the end of the year under review.

4.3 Transactions of Contentious Nature

The following observations are made.

- (a) A vehicle had met with an accident on 22 October 2012 at Panadura and compensation had not been received from the Insurance for the losses incurred relating to that accident. The relevant report in terms of F.R 104 in respect of this accident had not been submitted to the Auditor General.
- (b) The Institute had recovered a surplus margin of more than 50 per cent of the estimates prepared for certain external projects of the Government and subsequently it had been distributed among the employees in terms of provision of the Public Finance Circular No.380 dated 19 January 2000. For example:- A sum of Rs.3.5 million or 75 per cent of the 54 per cent surplus after deducting all the expenditure of the Project No.SLR RM9 864-867 with the Department of Railway.

4.4 Idle Assets.

Nineteen thousand six hundred and seventy six units relating to 47 items (Consumable R & D Stocks) utilized for researches shown at the value of Rs.469,444 had not been utilized since the year 2005.

4.5 Personnel Administration

Particulars of approved and actual cadre of the Institute for the year under review were as follows. Accordingly, the performance of various projects was at the lowest level due to existence of vacancies for 77 posts or 51 per cent.

Category of Employees	Approved Cadre	Actual Cadre	Number of Vacancies
-----	-----	-----	-----
Executive	74	37	37
Non executive	78	38	40
	-----	-----	-----
	152	75	77
	=====	=====	=====

4.6 Establishment of a Fund in respect of Provision for Gratuity

The account balance of provision for gratuity as at 31 December of the year under review amounting to Rs.14,961,180 had not been invested in a Government Bank.

5. Accountability and Good Governance

5.1 Corporate Plan

Even though a Corporate Plan should have been prepared so as to include at least 03 years in terms of paragraph 5.1.1 of the Public Enterprises Circular No.PED 12 dated 02 June 2003, a Corporate Plan so as to cover the year 2012 had not been prepared according to the Circular provision after the Corporate Plan prepared for the period 2007 – 2011.

5.2 Action Plan

The financial value of some of the projects expected to implement had not been separately estimated and shown, whereas programmes external to the Action Plan had also included therein and as such, it was unable to clearly assess the progress.

5.3 Budgetary Control

The following observations are made.

- (a) Savings of provision relating to five items of budgeted expenditure was at the range of 8 per cent and 31 per cent. The Budget had not been made use of as an effective instrument of management control due to this variance.
- (b) Even though the Budget should have been prepared in order to achieve the targets included in the Action Plan, it was unable to ensure the achievement of targets in recurrent and capital budget due to failure in showing financial data in the Action Plan prepared by the Institute.

(c) A sum of Rs.1,065,778 had been spent for activities not budgeted relating to 06 various Divisions of the Institute.

(d) Votes Ledger had not been maintained for control of expenditure.

6. Systems and Controls

Deficiencies in systems and controls observed during the course of audit were brought to the notice of the Director of the Institute from time to time. Special attention is needed in respect of the following areas of control.

- (a) Budgetary Control
- (b) Assets Control
- (c) Utilisation of Vehicles
- (d) Control of Advances
- (e) Debtors and Creditors Control
- (f) Revenue Administration

H.A.S.Samaraweera

Auditor General

Answers to the Report of the Auditor General, on the Financial Statements of the Arthur C Clarke Institute for Modern Technologies for the year ended in, 31 December 2012, in terms of the section 14/2 C of the Finance Act No. 38, of 1971.

2.2.1 Best accounting practices.

- (a) Work in progress has been included in the financial statements under the Current Assets expenditure head. However action will be taken to include it under Stocks, comes under the same Current Assets category, as shown in the Audit Report.
- (b) Revalued 4 vehicles have been sold within the year as mentioned in the audit query. The values of those vehicles in related to revaluation have been included in revaluation reserves. However after selling of that vehicles revalued value of these should also be removed from the revaluation reserves. Therefore, this revalued value has been shown in the income statement for the year, under other retained income as per accounting standard No.16.

2.2.2 Accounting deficiencies.

- (a) As the interest relevant to the NASDA and FINDS savings accounts could not be credited to the accounts by that time, deficit of Rs. 14,891.00 of balance amount has been shown in the cash flow statement.

Amount of Rs. 1737.00 of the NASDA project and amount of Rs. 13,154.00 of FINDS project could not be credited to the savings accounts. Actions have been taken to credit it to the savings accounts.

The amounts in these accounts have been allocated to the specific requirements and as such specific requirements had not been arisen in the relevant year, exchange of money had not been taken place throughout the year.

- (b) (a) Completed Courses.
 - (i) Introduction to Robotic Applications(Com.)
 - (ii) CPD-MEC 2012 Course (Ele.)
 - (iii) Computer Hardware Course for Professionals.
 - (iv) Computer Hardware Engineering for Professionals.
 - (v) Astronomy workshop 21st & 22nd December.

Above mentioned courses has been accounted as ongoing courses and steps have been taken to correct it.

(b) Completed projects.

- (i) Hardware recovery Feasibility Session(Com.)
- (ii) SL Railway PM2011-08 RCM 9 LPM(Com.) .
- (iii) SL Railway PM2011-07 RCM 9 LPM(Com.)
- (iv) SL Railway PM2011-09 CCS Project(Com.)
- (v) SL Railway PM2011-10 Project(Com.)
- (vi) CEB Project at Norochcholai(Com).
- (vii) Battery Testing Project 2012-03
- (viii) Display Air Lanka Cargo(Elec.)
- (ix) ITI Project 2912-14
- (x) Battery Testing 2012/04

Above mentioned projects (vii), (viii), and (x) have been corrected in this year. Actions will be taken to correct projects (i), (iii), and (ix)

As project (ii), (iv) and (v) are ongoing projects, expenditure for these projects have been shown in work in progress account in 2012.

2.2.3. Imprecise Changers

The difference of Nation Building Tax (NBT) amounted to Rs. 166,125.00 comprised of NBT to be paid for the income of Rs 131,012.55 and an amount of Rs 35,012.45. Necessary steps will be taken to correct this Rs. 35,012.45 by further scrutiny of accounts.

2.2.4 Accounts receivable and payable

(a) Accounts receivable

Though the Institute has accounted the expenditure amounted to Rs. 2,473,806.00 under the expenditure for “Divi Neguma” Programme for the prevailing year, the receivable amount in debtors balance was Rs. 2,630,652.00. The audit query states that difference of Rs, 156,846.00 of this is not clear. The amount of Rs. 279,378.21 to be received from this debtors balance was responsible for the previous year (2011). Expenditure for these programmes had been incurred in the year 2011 and invoices were issued in the prevailing year.

Further, invoices have been issued to the prevailing balance in the accounts to date as invoices should have to be issued before the end of the year 2012. Additional expenses for these programmes have been accounted at the preparation of year end accounts. The additional expenditure for Divi Neguma programme has been accounted to the Institution’s accounts considering the national importance of this programme.

(b) Accounts payable

The refundable deposits amounted to Rs. 226,980.00, will be taken into the revenue, this year in accordance with Financial Regulations 571(2).

2.2.5 Non availability of evidence for Auditing

- (a) The prices of the goods are not included in (Rs. 10,236,980) Stock Verification Reports though the details obtained by physical stock verification are included. However, prices of the goods are recorded in the stock ledger.
- (b) Actions are being taken to sign the maintenance agreements for locomotives, already repaired. Details related to used material has also included in the files of the relevant division. A definite figure cannot be given for man hours until the project is completed and actions will be taken in future, to record labour utilization for the completed projects.

2.2.6. Non compliance with laws, rules, regulations and management decisions.

- (a) As shown in the financial statement for the current year, the amount of Rs 1,298,754.00, which has to be paid, under the current assets as the Value Added Tax comprises the tax to be received in relevant to the expected income and Value Added Tax to be paid by the earnings for December, 2012.

An amount of Rs. 144,962.00 is the Value Added Tax to be paid for the revenue of the month of December, 2012 and the balance stated in the current assets, amounted to Rs.1,153,792.00 is the Value Added Tax relevant to the revenue to be earned. This has to pay after receiving that amount. Therefore it has been correctly accounted.

(b) Financial Regulations of the Government.

- i. **FR 104** – Primary investigations have been carried out in related to the 2 Accidents mentioned in the Audit Query. Actions will be taken to submit relevant reports to the Auditor General.
- ii. **FR 110** – Loss and Damage Registry is being maintained and actions will be taken to update the information
- iii. **FR 371**
 - (i) Advances are given in accordance with the State Procurement Guide. Sometimes delays could be observed in settlement of advances and actions are being taken to minimize these delays.
 - (ii) At the instances whenever difficult to obtain correct estimates and at the instances when the financial requirement could not be fulfilled immediately, gross estimates would have to be forwarded. These incidences could be mentioned as management decisions based on work requirement and productivity.
- iv. **FR 757(2)** – Stock verifications were carried in 2012, by Board of Surveys appointed for these purposes and relevant reports will be submitted for auditing.

- v. **FR 802 & 1647(E)** – Computerized Registry is maintained by the Institute as per Form FR and steps have been taken to prepare it as printed document.

(c) Circulars.

- i. **Budget Circular No. 842 dated 19 December 1978.**
Fixed Assets Registry is being maintained as per the relevant form, by the Institution from its inception.
- ii. **Budget Circular No. IAI/2002/02 dated 28 November 2002.**
Computers and Accessories are being included in the Fixed Assets Registry properly.

4. Operational Review

(a) Incomplete activities.

Space Application Division

1. **Study of solar flares using Radio Spectrometer**
50% of this programme has been completed and this programme was suspended temporarily midway as the relevant scientist left overseas for higher studies. The programme supposed to re-start by May, 2013 after his arrival and targeted to complete at the end of this year.
2. **Spectroscopic observations of Methane and Ammonia on Jupiter or Investigation the Balmer emission line profiles of be stars.**
This Project has been completed by January, 2013. The project was delayed as the relevant scientist had to engage in other flagship projects (Water Rocket Competition and Astronomy Workshop)
3. **Establishment and start of annual conference on space and planetary science.**
This work has been assumed to the Engineers and Scientists, who were newly appointed in 2012. But it has to be delayed as they had to pay more attention on “Space technology collaboration forum” project.
4. **Preparation of land slide hazard maps for the landslide prone districts using RS and GIS Collaboration with NBRO.**
This Project was suggested to implement with the co-operation with National Building Research Organization and it could not be started due to lack of expected support from that institute. However first stage of another alternative project “Analysis of Urban Heat Islands with vegetation cover in Colombo City” was completed, using the data and information (RS & GIS) obtained from GISTA Institute of Thailand.
5. **Study of Balmer discontinuity of Band A type stars in near UV spectroscopy.**

This project had to be postponed due to a technical defect of the camera. Another alternative project “Determination of orbital parameters of celestial objects” implemented instead of it has been completed by now.

Communication Division

1. ACCIMT Library function automation firmware product and Library MIS System (Normal quantum of work)

Research level units have been completed during the relevant year and units for safety measures have to be completed further (RFID Antenna & Reader interface operating in long range). Though the relevant engineer has been engaged in the above project shortage of essential material (gauge 20 Copper sheets) cause the delay. However, as the relevant engineer left the institute at midyear, another engineer was appointed for the project and period up to January 2013 has to be spent for initial studies of the project (learning curve). However, testing of Management Information Software (MIS software) has been completed.

2. New engine controller design for class Sqpc using plc of Sri Lanka Railways.

Project proposal has been forwarded to the Sri Lanka Railway Department and due to non response from them, final decision was delayed.

3. Development of Tea Quality Grading and colour separating system

Since technical staff of the institute had not fulfilled pre qualification in the field of the project more time has to be spent for feasibility study. In addition more time has been used up for procurement process and the project was delayed as the responsible engineer left the Institute.

However, Engineering Drawings for manufacture of mechanical parts and several initial steps has been completed amidst the above difficulties.

4. Data logging and monitoring system for water pumping system of NWSDB.

Steps have been taken to complete the project, as agreed by the service provider and the first stage was completed within the year 2012. The second stage of the project “Online interface software” is expected to be complete by the 2nd quarter 2013.

5. Class M9 LOCO in service local surveillance system for SLR.

Due to financial constraints faced by the Department of Railways, Sri Lanka, it has been difficult to obtain their approval for implementation of the project.

6. Robot manipulator (PUMA 562 Controller design)

There was no permanent Electronic Engineer to implement this project throughout the year, 2012. As an alternative, attempt was done to proceed with trainees and a mechanical engineer, appointed on contract basis.

7. Workbench testing of mobile manipulators.

This activity was able to complete during the 1st Quarter 2012.

8. Recover hardware and software Microprocessor based subsystem used in Alstom Class M9 locomotives

Half (50%) of the project which has been already implemented has been completed by now.

9. Class M9 Locomotive maintenance.

Steps have been taken to prepare the agreement of the relevant project as advised by an external lawyer and necessary actions are being taken with the Sri Lanka Railways.

10. Recovery of mobile ice cream vending jingle boxes of Ceylon Cold Stores.

This is a maintenance agreement and necessary services are being provided on requirement. Progress of this has not been included in the annual progress report by a mistake.

11. Central Bank owned Fort Clock Tower Electronic System.

This is a maintenance agreement entered into with Central Bank of Sri Lanka and maintenance services are provided to time to time on requirements. Progress of this has not been included in the annual progress report by a mistake.

Information Technology Division.

1. Create or modify existing tool to automate string placements in Mozilla Location.

Implementation of this programme has been delayed due to lack of staff as priority had given to new courses on the demand of the Industries Sector.

2. Accounting System - KDU

Signing of the agreement has been delayed due to management delay of the Kothalawala Defense Academy and necessary actions have been taken now.

3. Payroll system-ITUM (Institute of Technology – UMO)

The modification requested by the client, ITUM institute of the University of Moratuwa, for the installation of the software package of this project have been completed by now. Payments are due after “Testing of manual and computerized system” for 3 months period by the client.

4. On-line System - BPU

Installation of all the modules of this project could not be completed due to the delay at feeding data by the client, University of Pail and Buddhism. However 80% of the project has been completed by now.

5. In-house Software module

This programme has been completed.

Industrial Services Division

1. Accreditation

This programme could not be completed up to the expected level due to the problem of recruitment and retention of technical staff.

2. Training Programms - Continuous professional Development programmes

80% of this has been completed by now and the delay was due to the time allocation for the other priority project.

Electronics Division

1. Wireless Irrigation automation phase I & II

80% of this has been completed by now and the delay was due to the time allocation for the priority project (RCCB Testing) of the same division.

2. Accreditation of the laboratory.

This is a target achieved project which received accreditation for “Surge” research works on June 2012, by SLAB.

- (b) Money available in the accounts of NASDA and FINDS projects will be used for specific activities of the relevant felid. The amount available in the Director’s fund will be utilized only for specific and special requirements. These amounts allocated for specific requirements, have been invested in Treasury Bills, for the inactive period, until they are utilized, on approved of the Excess Money Control Board.
- (c) Invoices have been issued for all the payments which have already signed the agreement. The relevant amounts are expected to be received
Preparation of relevant agreements had been assigned to the Attorney General’s Department and signing of the agreements were delayed due to the several reasons which have to be come in to a final decision by discussions with Sri Lanka Tele communication Regulatory Commission and due to delays in relevant process with the Dept. of legal Draftsmen. However all these problems have been solved and steps have been taken to account the relevant Income.
- (d) This money is expected to utilize for purchases of required equipment to facilitate researches which are already planned, at the instances when treasury provisions could not be obtained in future.

4.2. Management inefficiencies

- (a) Vehicles owned by the institute are used at optimum level and rented vehicles are used for additional requirements. Further this service outsourcing is more productive than increasing the No. of pool vehicles.
- (b) An advance of Rs. 48,000.00 (50%of the total amount, Rs 24,000.00 each) has been given to the SJ Engineers for manufacture of 2 lamp posts and one completed lamp post has been handed over to our Institute. Accordingly, accounts have been closed considering the amount of Rs. 48,000.00 already paid as total cost for that lamp post.

4.3 Controversial exchangers

- (a) Repairs pertaining to the accident occurred at Panadura has not been completed and relevant reports will be submitted for auditing as per F.R. after completion of repairs.
- (c) The percentage mentioned as excess expenditure for projects under the public finance 380 shows the value of expertise in Human Resources and special talents/skills and incentives for relevant expertise on such activities expected by the same circular

4.4 Inactive Assets

These are kept in the store for future use and actions will be taken to dispose them in due time after the scrutiny.

4.5 Administration of the Staff

More percentage of the vacant posts of the institute comprised of engineering staff. The relevant salaries and other allowances for these posts are very low compared to the prevailing job market and, therefore it is very difficult to appoint and retain in the relevant posts.

However, actions were being taken to achieve the performance of the projects getting the service of available staff at optimum level.

4.6 Establishment of a fund for provisions of employees Gratuity

Allocation of money for gratuity payments is only for accounting purposes. Therefore the amount allocated for Gratuity could not be used in outside investments.

5 Accounts and Good Governance.

5.1 Corporate Plan

Corporate plan for 2008-2012 has been sent to the Budget Department of the General Treasury through the line Ministry on 31.01.2012. Approval of the Board of Management has been obtained for the Corporate Plan prepared up to the year 2017, covering the year 2013.

5.2 Action Plan

Financial value of the enterprise included in the Action Plan is mentioned in relevant Budget estimates. As this Budget Estimates are prepared after the feasibility study of the relevant Project. It is not practicable to include the financial value of such project to the action plan. However, as per the observations mentioned in the audit report 2012 on action plan 2011, actions have been taken to include Project Cost (for the project already prepared project plan) , recurrent expenditure, technical time frame and income separately in preparation of 2013 Action Plan. Programmes included in the Action Plan are relevant to the action plan of the Institute and it included programmes appropriate to the no. of staff in each division. In addition, it includes programmes, planned to complete during week days or weekends.

5.3 Administration of Budget Estimates.

- (a) Attempts were done to utilize Budget Estimate as a productive management tool whenever possible and variations could be observed in some conditions (budgeted and actual expenditure) beyond the control of institutional and management level.
- (b) Project Cost is included into the Project Plan at the preparation of Project Plans which has been included in the Action plan.
- (c) Provisions are made by the General Treasury under different Capital Expenditure Heads. Expenditure is allocated as Internal Measuring, among each division of the Institute for easy

purposes. Exchange of Expenditure Heads, within the approved budget is practiced on necessity of the institute as a management decision.

(d) Separate Accounts have been maintained for all activities within the General Ledger.

6. **Systems and Administration**

Attention of the Institution will be paid to the areas mentioned in the Audit Report.

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Signed by
Engineer Sanath Panawannage
Director/CEO