2021

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வருடாந்த அறிக்கை

ANNUAL REPORT

නවීන තාක්ෂණ පිළිබඳ ආතර් සී ක්ලාක් ආයතනය.

நவீன தொழில்நுட்பவியலுக்கான ஆர்தர் சி. கிளார்க் நிறுவகம்.

Arthur C. Clarke Institute for Modern Technologies.

Arthur C Clarke Institute for Modern technologies
Annual Report 2021

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Arthur C Clarke Institute for Modern Technologies
Katubedda,
Moratuwa.

Hon. Minister of Education,
Division of Research & Innovation,
3rd Floor,
Sethsiripaya Stage 1,

Battaramulla.

Hon. Minister,

Annual Report of the Arthur C Clarke Institute for Modern Technologies for the period from 1st January to 31st December 2021.

In terms of section 40 of part VII of the Science & Technology Development Act. No. 11 of 1994, amended by Act No.32 of 2013, I have honour to submit herewith the Annual Report of the Arthur C Clarke Institute for Modern Technologies for the year 2021 along with,

(a) A copy of the Audited Statement of Financial Performance

(b) A copy of the Audited Statement of Financial Position and

(c) Auditor General's Report and the Observations of the Institute on the same,

for being submitted for the approval of the Cabinet of Ministers.

Yours faithfully,

Director General & CEO
Arthur C Clarke Institute for Modern Technologies

1. General Information

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 Education, Division of Research & Innovation. 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

To be a leading innovation center for Modern Technologies in the region

1.3. Mission

To develop, foster and facilitate the domestic base of modern technological capabilities through innovation, R & D, training, industrial services and international collaboration

1.4. Governing Ministry

Ministry of Education, Division of Research & Innovation

1.5. Members of the Board of Governors – 2021

1.	Prof. Sisil Kumarawadu	Chairman – Board of Governors
2.	Eng. Sanath Panawennage	Director General & CEO - Member, Board of Governors,
3.	Prof. K.P.S. Chandana Jayaratne	Member, Board of Governors
4.	Prof. N.D. Gunawardena	Member, Board of Governors
5.	Prof. A.K.W Jayawardena	Member, Board of Governors
6.	Mr. Merrick Gooneratne	Member, Board of Governors
7.	Mr. Rajitha Dahanayake	Member, Board of Governors
8.	Mr. Sushena Ranathunga	Member, Board of Governors
9.	Prof. S.A. Ariayadurai	Member, Board of Governors
10.	Ms. Udeni Udugahapattuwa	Member, Board of Governors
11.	Prof. Ranjith Premalal de Silva	Member, Board of Governors

Board Meetings held for the year 2021

Meeting No.	Date of Meeting
2021/01	26/01/2021
2021/02	23/02/2021
2021/03	23/03/2021
2021/04	27/04/2021
2021/05	30/06/2021
2021/06	27/07/2021
2021/07	26/10/2021
2021/08	23/11/2021
2021/09	28/12/2021

2. Executive Summary

During the year under review, albeit under the unfavorable socio-economic and environmental conditions that prevailed mainly due to the persisting Covid 19 pandemic, the institute managed to achieve substantial accomplishments in its key operational areas including research and development, technological services, and training and consultancies, whilst contributing to developing national capacity in the broader domains of technology that the institution is specializing in.

In pursuance of its activities as the nationally mandated institute for space technology capacity development in the country, the institution continued with its technology collaboration initiatives with its international collaborating partners, which has been central to its achievements in the area of nano-satellite development. Steady progress was achieved during the year in the collaborative project for the design, development and testing of the 6-unit advanced nano-satellite, KITSUNE, which is undertaken as a five-partite joint project with Kyushu Institute of Technology (Kyutech), Japan, and three other collaborating institutions from Japan and Singapore.

This nano-satellite carries five missions namely, earth observation with 5m resolution, satellite based IOT, ionospheric testing, high speed communication and standardized Cube Sat bus and our engineers are the prime contributors for this effort. The project has provided a vital opportunity for ACCIMT's engineers to gain the much needed practical exposure in the advanced nano-satellite technologies, whilst the institute becoming entitled to have access to the full range of research capabilities of the satellite once in orbit, thereby significantly contributing to enhance the overall base of advanced technological capabilities in the country in the domain of space technology which could alternatively come only at the expense of a highly capital intensive programme. Significantly, the ACCIMT successfully negotiated to become a collaborating partner of this project, with no capital expenditure commitment by the institute, purely on the basis of the technical contribution of its engineers.

In the meantime, in the domain of drone technology, the institute was able to make significant progress under challenging circumstances by designing and developing a number of Unmanned Ariel Vehicles (UAVs) for customized applications. A key accomplishment achieved during the year under review was the successful development of a flying-machine aimed for surveillance applications, with the ability to take-off and land with minimal space availability. A significant achievement was the supply of two ACCIMT-developed drones to Special Boat Squadron of Sri Lanka Navy, under the funding of a special programme administered by the United Nations Office for Drug Control.

Another important activity that continued from the previous year has been the design and development of a personal security/alarm device against crime for the Nordic countries. This product was able to obtain the 'CE' (European Conformity) marking affirming that the product conforms to the relevant European standards, successfully overcoming the challenges faced during the qualification process.

In another development, commencement of the design and development of a capacity tester (C10 and C20) for testing of motorcycle and automobile batteries as per applicable SLS standards portray the ACCIMT's commitment to serve the specific needs of export-oriented manufacturing industry of the country. During the year under consideration, development of laboratory prototype was completed, with calibration and field testing remain to be completed.

Another key in-house research and development projects continued during the year 2021 Included Xilinx FPGA based tea color grading system.

In the area of remote sensing and GIS, the ongoing project "Rice yield forecasting and cultivated paddy area identification" was extended to cover the major paddy cultivation districts for the 2021 Yala season. The model developed uses satellite imagery of MODIS satellite to forecast the yield and the results are to be verified with actual data to be obtained from the Department of Senses and Statistics. The other projects undertaken in the area of Remote Sensing/GIS included Forest cover types mapping of Sri Lanka using open access satellite data, and a method to evaluate the epidemiology of Covid-19 using GIS and cartography.

The activities carried out by the Information Technology division during the year included developing a web-based interface for displaying sensor-data collected from automated weather stations for climate monitoring, development of a number of Mobile Apps for specific applications, and several information-systems development and enhancement projects.

In the area of Astronomy, the institute conducted three research projects namely, an international collaborative research project on Cataclysmic Variable Star, Spectroscopic investigation of Delta Scuti stars (Asteroseismology) and Design and construct of a long wave antenna system for e-CALLISTO network, and also published one of the research outcomes in the Journal of the American Astronomical Association.

Successfully coping with the unfavorable conditions caused by the pandemic, the institute managed to maintain a steady flow in the delivery of its services to the industrial clientele in the areas of electronic test and measurement equipment calibration; performance testing of various types of electronic equipment, accessories and modules including lead-acid batteries, surge protective devices, LED and CFL lamps, and other specific client-requested assignments. As a result, during the year the institute issued 236 performance test reports and 83 of calibration reports apart from undertaking a considerable number of consultancies and advanced hardware recovery assignments.

While Continuing Professional Development (CPD) and other training activities, and science and technology popularization activities remained the deliveries that were most effected due to the pandemic, the institute nevertheless managed to conduct three CPD courses namely, CCTV security systems (ELV) configuration, installation and maintenance, Programmable

Logic Controller and Modern electronic test & measuring instruments with digital emphasis, attracting 85 professionals, and also two basic and intermediate level training programmes, intermediate workshop on robotics, and a workshop on introduction to practical astronomy.

It is to be noted that the institute managed to achieve the aforesaid substantial performance outcomes whilst being continually affected by the constraints imposed by the longstanding issues of difficulty in recruitment and retention of core technical staff, mainly due to unfavorable remuneration, and the necessity for complying with the procedural-compliance-oriented, rather than output-oriented, externally stipulated generic administrative control requirements.

Eng. Sanath Panawennage

Director General /CEO
(Member, Board of Governors)

3. Divisions of the Institute

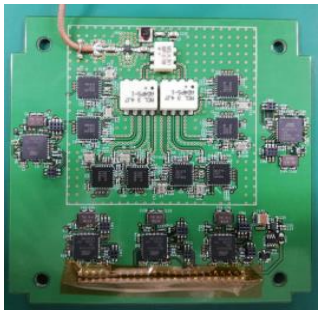
- Electronics & Micro Electronics
- Communications / Robotics
- Industrial Services
- Space Technology Applications / Space Technology /Astronomy
- Information Technology
- Administration, Finance and Human Resources

Nano satellite (6U) development and capacity building with KITSUNE

KITSUNE, 6U Nano satellite development project was started in 2020 for further capacity development of the engineers in space technology. It carries five missions namely earth observation with 5m resolution, satellite based IOT, ionosphere sensing, high speed communication and standardized Cube-Sat bus and is now ready for launching after successful research, development and testing. The partners of this project are Kyushu Institute of Technology (Kyutech), Nanyang Technological University, Harada Seiki Inc. (Industry partner Japan), Addnics Inc. (Industry partner Japan) and ACCIMT.

As outcomes of the project, ACCIMT will have access to 5m resolution satellite imagery which can be used for a wide range of remote sensing applications. Further access to "store & forward" payload which can be used for applications such as gathering of water level, weather or environmental data from remote locations (such as wild life sanctuaries, hydro power plant catchments, mobile weather stations, etc.) to stakeholder's desired location via a satellite communication link. For ground operation and communication separate GST (Ground Sensor Terminals) are to be operated at remote locations.
Following sub systems are the ACCIMT contributions to this KITSUNE Nano satellite.

OBC Board



LoRa Board

UHF COM Board

EPS Board

Sub systems

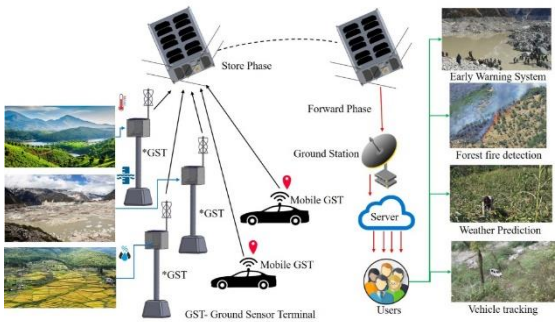
- On Board Computer (OBC)
- UHF Communication s (UHF COM)
- Long Range Low Power Communication (LoRa)
- Electrical Power Supply (EPS)

Payloads

- Designing and Programming the OBC Board of SPATIUM 1U Side (OBC – Onboard Computer. Brain of the SPATIUM side)
- Designing and Programming the LoRa Mission Board (This board collects data from ground sensor terminals)
- Programing the SPATIUM side UHF Communication Board (This board is the main transceiver of the SPATIUM side. It is used to send telemetry data and receive uplink commands)
- Managing CSAC Mission Data and Programing (CSAC – Chip Scale Atomic Clock)
- Managing EPS of the SPATIUM Side and Programing
- EPS - Electrical Power System

Main mission applications of KITSUNE

While fulfilling the major objective of capacity building in space technology for the team of engineers, the KITSUNE Nano satellite is having two key applications namely, ground sensor terminal (GST) for remote data collection (satellite link based wireless communication) and camera payload with 5m resolution for GIS (Global Information System) project related image acquisition.



Ground Sensor Terminal (GST)

GST, remote standalone data collection terminals are having wider applications in Sri Lankan context for remote sensor data communications and Radio Frequency firmware developments were completed as a separate project.

Personal security/alarm device against crime for European countries

This is an advanced electronics based personal safety product to help prevent crimes against women at outdoor environments for Scandinavian countries. This project is to design and develop a high-tech, miniature, advanced electronic product and our client is an export oriented electronic product/sub assembly manufacturer with a global clientele. The total solution consists of three parts, namely, waistband with a LED strip, hand-held alarm and a smartphone. Two parts of the product, waistband with a LED strip and hand-held alarm are to be designed and developed by the ACCIMT.

Amidst many challenges for designing and developing a product acceptable for highly quality concerned European market the key would have been adhering successfully to the stringent product specifications which were revised many times by the client. The product was also certified for CE marking affirming that the product conforms to European health, safety, and environmental protection standards. Apart from that as part of the activities carried out during the year concerned, Include manufacturing and testing of another 05 units with improvements to PCBs and the casing for the handheld unit conforming to IP 65 protection standards. The 05 units were confirmed for the operation as per the product specifications by the local manufacturer and the Swedish party. 100 more units have been manufactured in the manufacturing facility located at TOS Lanka and programmed and tested at ACCIMT before dispatching to the client in Sweden.

Surveillance Quad-copter UAV

Special Boat Squadron (SBS) of Sri Lanka Navy (SLNAVY) was donated two drones to be utilized for training purposes primarily for improving piloting and maintenance capabilities, under the United Nations Office for Drugs Control Program (UNODC/UNOPS). The ACCIMT managed to acquire this tender through a competitive international bidding process and was able to supply and commission 2 Nos. of ACCIMT developed drones and to provide training and maintenance services required by SLNAVY.



Vertical Take Off and Landing Unmanned Aerial Vehicle (VTOL-UAV)

After undergoing through extensive research and design process the ACCIMT managed to develop an UAV which can be taken off and land using a limited space specially targeting costal surveillance applications. Prototyping work of this flying machine was initiated in 2020 and product testing was completed during 2021. The UAV is aimed to be used for surveillance application demonstration and is to be used in a collaborative project with SLNAVY.

To get the optimum benefits of the VTOL-UAV in surveillance applications, coverage/endurance expansions and high quality imaging payloads needed to be accommodated. The cost of above component requirements are very high. ACCIMT was managed to secure funds from United Nations Office for Drugs Control Program to purchase the items for this nationally important product development, which enhance and at the same time demonstrate technical development capabilities of Sri Lanka. The items are to be received by SLNAVY and will be handed over to the ACCIMT in early 2022 for continuation of the project.


Development of capacity tester for testing of batteries

This project is to design and develop a Capacity Tester (C10 and C20) for testing of Motorcycle and Automotive batteries as per the applicable SLS standard for a leading local battery manufacturing and exporting company. Our client is in the process of setting up a fully-fledged in-house test facility for testing of Motorcycle and Automotive batteries. The tester was designed as per the applicable national and international standards, which is used to verify the charge stored by a battery by 10 hour and 20 hour ratings. The laboratory prototype was completed and calibration and field testing yet to be performed.

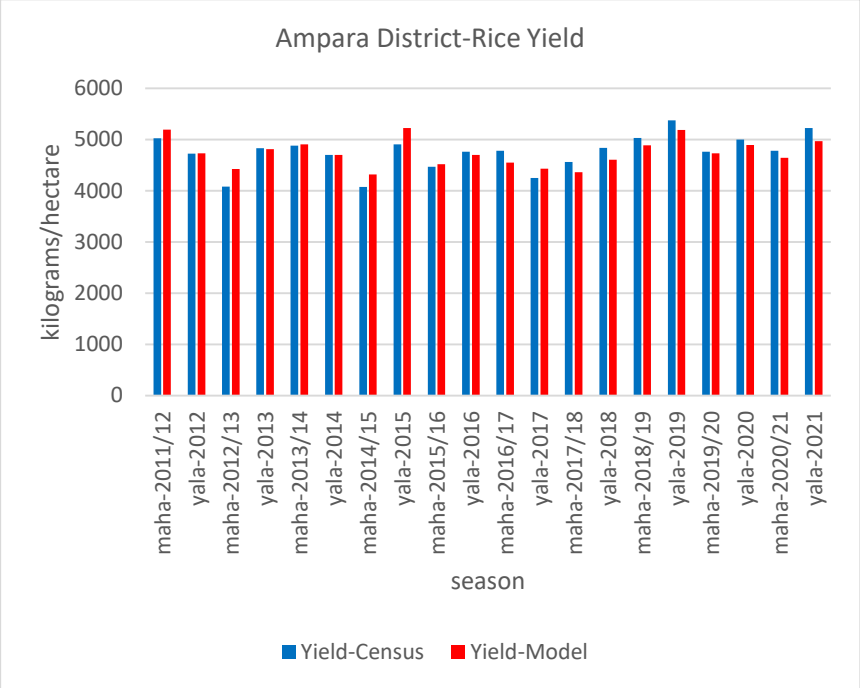
Rice Yield Forecasting & Cultivated Paddy Area Identification - Major Paddy Cultivation Districts

A model based on satellite imagery has been devised to find out the extent of paddy land cultivated. The method suggested in this project can be used to identify any cultivation which has unique temporal dynamics. Linear models can be used to build up yield forecasting models and the most suitable time for yield forecasting is around the peak of the season.

Ampara district was selected for the "Rice Yield Forecasting & Cultivated Paddy Area Identification" pilot study and was carried out successfully for the 2018/Yala season. Using the low spatial resolution but high temporal resolution MODIS satellite data (GSD 250m, 8 days) 205,680MT of rice yield was calculated. The methodology used in this project was applied separately for the large-scale rice cultivating districts.

This research project is completed for the 2021/Yala season for major paddy cultivation districts (i.e. Polonnaruwa, Ampara, Batticaloa, Hambantota, Anuradhapura, and Trincomalee,) in Sri Lanka.

District	Forecasted yield (kg/ha)	Cultivated Area(ha)	Total Yield(MT)
Ampara	4968	60208	299097
Polonnaruwa	5103	61023	311381
Batticaloa	2928	29438	86183
Trincomalee	5007	26392	132141
Hambantota	5953	26806	159587
Anuradhapura	4498	45264	203606


Ampara District-Rice Yield
kilograms/hectare
6000
5000
4000
3000
2000
1000
0
maha-2011/12
yala-2012
maha-2012/13
yala-2013
maha-2013/14
yala-2014
maha-2014/15
yala-2015
maha-2015/16
yala-2016
maha-2016/17
yala-2017
maha-2017/18
yala-2018
maha-2018/19
yala-2019
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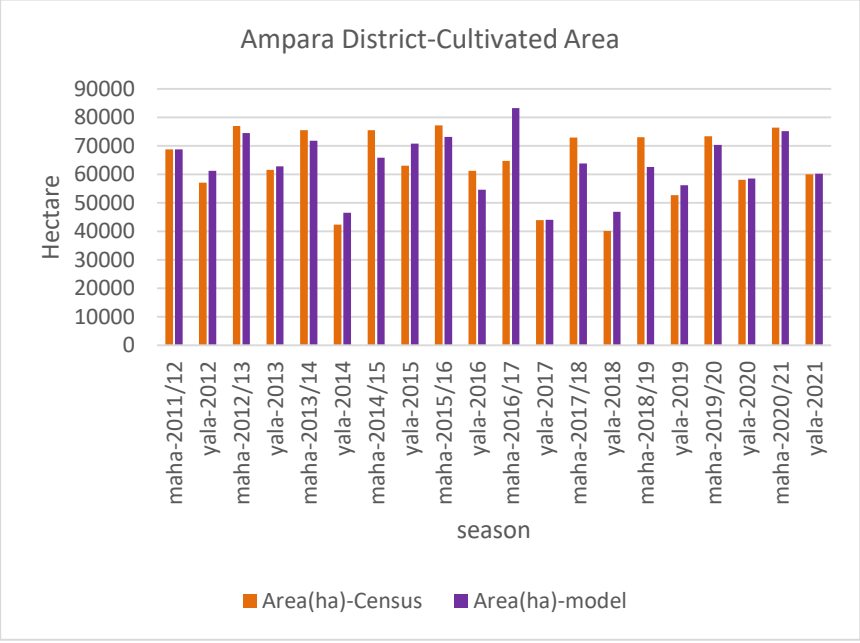
yala-2020
maha-2020/21
yala-2021
season
Yield-Census
Yield-Model


Ampara District-Cultivated Area
Hectare
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
maha-2011/12
yala-2012
maha-2012/13
yala-2013
maha-2013/14
yala-2014
maha-2014/15
yala-2015
maha-2015/16
yala-2016
maha-2016/17
yala-2017
maha-2017/18
yala-2018
maha-2018/19
yala-2019
maha-2019/20
yala-2020
maha-2020/21
yala-2021
season
Area(ha)-Census
Area(ha)-model

5.1 Industry-initiated Research & Development Activities in Engineering/IT

Precision Agriculture for Tea Plantation, Agro Meteorology Weather Station

Based on the success achieved by conducting a similar project in 2020 for Tea Research Institute of Sri Lanka, during 2021 three new systems were installed and commissioned at Knuckles, Horton Planes and Sinharaja. The new systems were incorporated with additional data gathering facilities fulfilling the data requirement of Agricell in the tea grown areas.

The key goals of this project are to, monitor, model and predict weather in the areas where there are tea plantations and to monitor the tea plant growth conditions with carbon gas, nitrous gas, and soil moisture and soil temperature content.

The parameters monitored in real-time in the stand alone systems are

- Rainfall, Air Temperature, Humidity, Wind direction, Wind speed
- UV level, Lux (light) level, Soil moisture, Soil temperature, Air ammonia level
- Carbon dioxide, NOx, NH3, Carbon Monoxide

Precision Agriculture

In support for the use of advanced technologies for green agriculture sector development activities of the government of Sri Lanka, the ACCIMT presented a proposal on “Precision Agriculture” using IoT (Internet of Things) based solutions, which facilitate decision support process taking into account environmental data in plantations and farms. The major benefits of the proposed application would be to asses irrigating requirements and optimize fertilizer usage and better measurements in primary soil nutrients (Nitrogen, Prosperous and Potassium). Measurements can be made prior to as well as after fertilizer usage depending on user requirements and expert opinion.

5.2 In-house Research and Development Projects in Engineering/IT

Xilinx FPGA based Tea Color Grading System

The design development of the system was completed and tested at workshop environment with limited tea samples obtained from a tea factory.

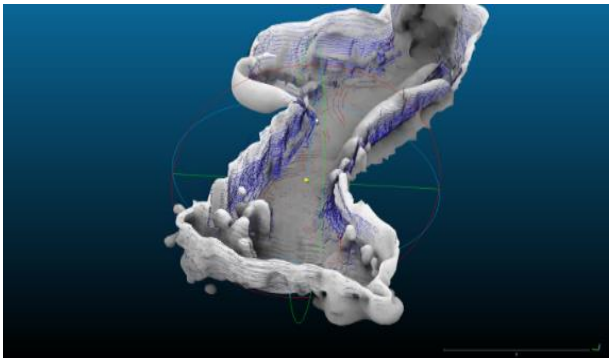
Next immediate step is to perform testing in actual factory environment with varying tea particle sizes and colors. Machine calibrations, learning, training, fine tuning of the process speeds with maximum achievable efficiency in a single run, repeated runs are the adjustments expected during factory runs. In any imported system from either China or Korea similar factory runs are done after installing the systems.

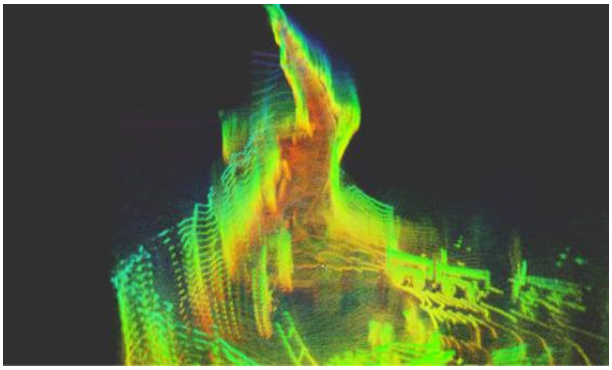
Terrain mapping track driven rover based on 3D mapping

Further development and refinement were completed for 3D SLAM algorithm in the following elements, as it was a research platform.

- Enclosed areas (eg- tunnels) and open areas (streets)
- Mapping and meshing (Meshing for enclosed areas)
- Incorporating previously ROS (Real-time Operating System) based system for a user friendly VeloView interface.

Preliminary simulation testing of exploration algorithms (RRT based on frontier exploration algorithms were tested on gazebo simulator



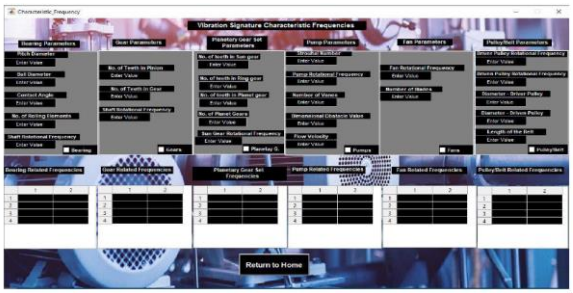


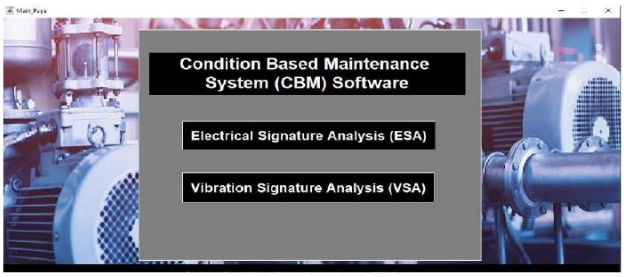
Low Cost Solution to Improve Systems through Predictive Maintenance (PdM)

Phase I and II of this project were carried out as supportive activities to establish a Predictive Maintenance Center.

During the phase I, a fault simulator was designed and was constructed.

The phase II was carried out to study different vibration signatures, through controlled experiments that emulates real world machinery using the developed fault simulator, with the intention of creating a database. During this phase the simulator was integrated with a gear system. An interface was developed to get signature analysis with the help of MAT





Temperature Monitoring/Controlling System for Poly tunnel

The objective of this project is to develop and implement a modern, feasible and cost-effective technique to monitor and maintain steady temperature range inside a poly tunnel facilitating sustainable crop production in the regions susceptible for adverse climatic conditions.

A mushroom farm from Narammala has been identified as the pilot site for system implementation. A temperature control system has been installed at a site and field testing was completed. This flexible system could be managed/controlled as per individual farmer requirements.

Center for Lightning Protection

A full-fledged center for lightning protection has been planned with the intention of promoting research & development, knowledge dissemination, undertaking consultancy services and formation of policy recommendations. The proposed project would result in reducing lightning related damages and losses, standardizing protection and enhancing subject specific research and development. During the year under consideration several consultancies on designing of structural and surge protection systems and testing services were provided to government and private sector institutions located various parts of the country. A webinar was conducted with resource contribution coming from Sri Lankan and foreign (namely US, Indian, South African and Bangladeshi) intellects to mark the international lightning safety day 2021.

Information Systems Development Projects

Information Technology Division of the institute has been developing information system solutions for public and the private sector organizations on various user-specific applications upon request.

Development of IT Solutions

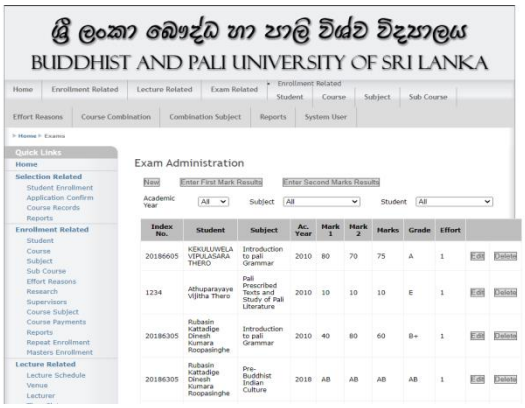
Addition of three more automated weather stations for climate monitoring

IT Division developed a web-based Interface for displaying collected sensor data, it's graphical representation, analysis of raw data for research purposes and data downloading. This dedicated software system consists all the features required to display, analyze and download selected data set for further processing.

Morning-Side Sinharaja, Knuckles Pitawalapathana and Horton plains are newly added to the existing system.

Student Registration and external Exam Results for Buddhist and Pali University

The Student Registration and Examination module for Bachelor of Arts general degree was completed as a part of Management Information System (MIS) development project for the above client. The university currently using this system and fully-featured MIS is planned to complete by December 2022.



Development of Mobile Apps

IT Division developed number of Mobile Apps in 2021 and one key project would be real-time display of water level at pump stations of Nilwala River.

The Department of Irrigation was the beneficiary and the product facilitate real-time data for supporting decision making process.

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.
- Accounts System – Buddhist and Pali University, maintenance agreement has been signed.

In-house Software Development

The following software systems were further developed and modified in 2021 to enhance the efficiency of internal administration process of the institute.

- Project Registration System
- Payroll System
- Leave and Attendance System
- Accounts System
- Invoice System

ACCIMT LAN, Web, and related Network Services

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

5.3 Research Projects in Astronomy

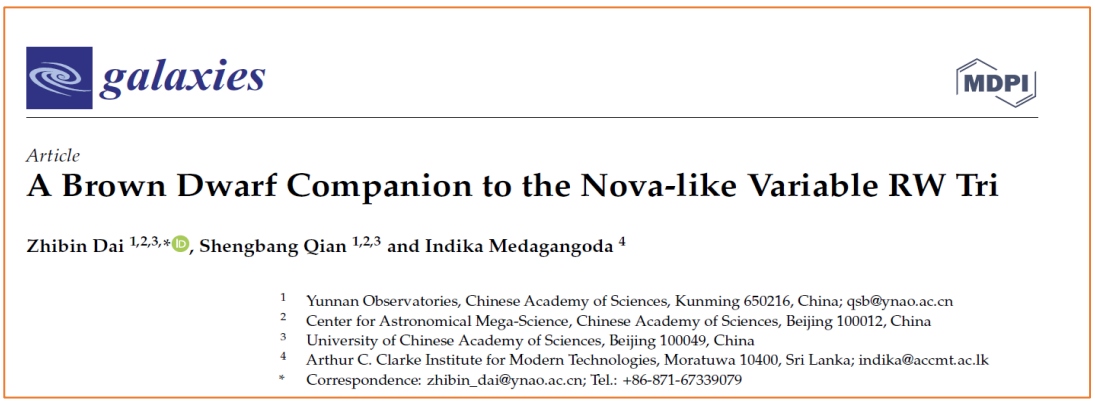
International Collaborative Research on Cataclysmic Variable Star

Research study in cataclysmic variable (CV) star systems was started in 2018 in collaboration with Yunan astronomical observatory under Chinese academy of science. During this period three international journal publications including journals of American Astronomical Association, and one local publication were done. The objective of this long term research is to study and investigate the evolutionary characteristics in various Cataclysmic Variable systems such as Novae, Nova-like systems, dwarf novae, recurrent novae, supernovae, Magnetic & Intermediate magnetic CVs, and their sub classes etc. through the mechanisms involved in mass transfer, out bursts, angular momentum loss, magnetic characteristics, orbital motions etc. which related to the individual components of the CV systems such as white dwarf, accretion disk, Roche-Lobe, hotspot etc

Results

An international paper publication was done at the Journal named “GALAXY” of the Multidisciplinary Digital Publishing Institute (MDPI) in Switzerland.

Tittle of the paper: A Brown Dwarf Companion to the Nova-like Variable RW Tri



galaxies

MDPI

Article

A Brown Dwarf Companion to the Nova-like Variable RW Tri

Zhibin Dai [1,2,3,*], Shengbang Qian [1,2,3] and Indika Medagangoda [4]

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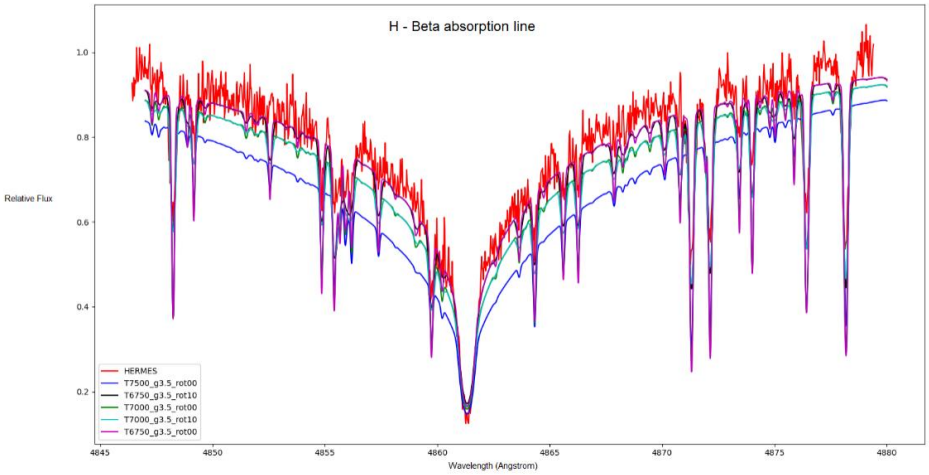
Spectroscopic investigation of Delta Scuti stars (Asteroseismology)

The Delta Scuti stars are short period pulsators which locate main sequence and post main sequence region in HR diagram. The internal properties of Delta Scuti stars are yet largely unknown. The identification of radial and non-radial modes of pulsations reveals the properties of internal structure of Delta Scuti stars. The follow-up ground based spectroscopic observation supports this investigation.

The Delta Scut star, SZ Lyn is observed in high resolution using HERMES Mercator telescope, Spain and low resolution in Mount Abu, India. The high resolution and low resolution spectroscopy data is initially analyzed with the synthetic spectra for proper modeling of the stellar parameters. The optimization of the model parameters is in progress.



Design and Construct a Long Wave Antenna System for e-CALLISTO Network

The solar flares, energetic event on the active sun are yet vastly unknown physical process in solar astronomy. The multi-wavelength study of solar flares should be carried out in long term basis for proper modeling of emission process of solar flares. For the modeling process, the magnetic field measurements are essential parameter. Therefore, a setup for polarization measurement is proposed.

The antenna and radio frequency electronics (RF) should be designed and constructed for the two CALLISTO receivers for the measurements of polarization of solar radio bursts.

In year 2021, the designing phase of the antenna system is finished. The proposed antenna is a Short Wave Antenna which is operating in the frequency range of 10 – 100 MHz range. The 4NEC2 antenna designing software is used for testing the performance of the antenna over the said frequency range. The following figures show the antenna design and the results of the performances.

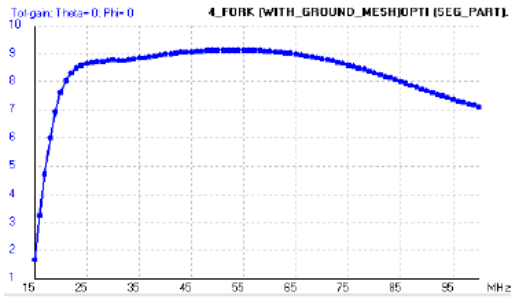
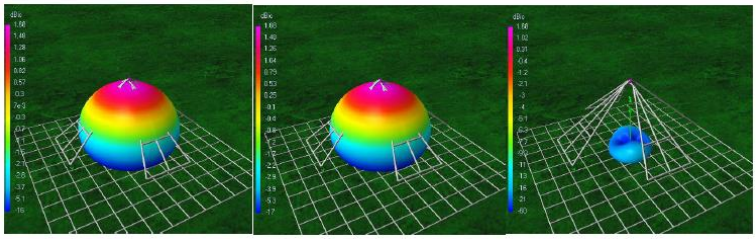


Fig. 4. Total gain for each frequency in the considered frequency range (with 1 MHz resolution). Maximum gain 9.12 can be seen at 54 MHz. At 100 MHz, the gain is 7.11 and near 20 MHz it is 7.61.

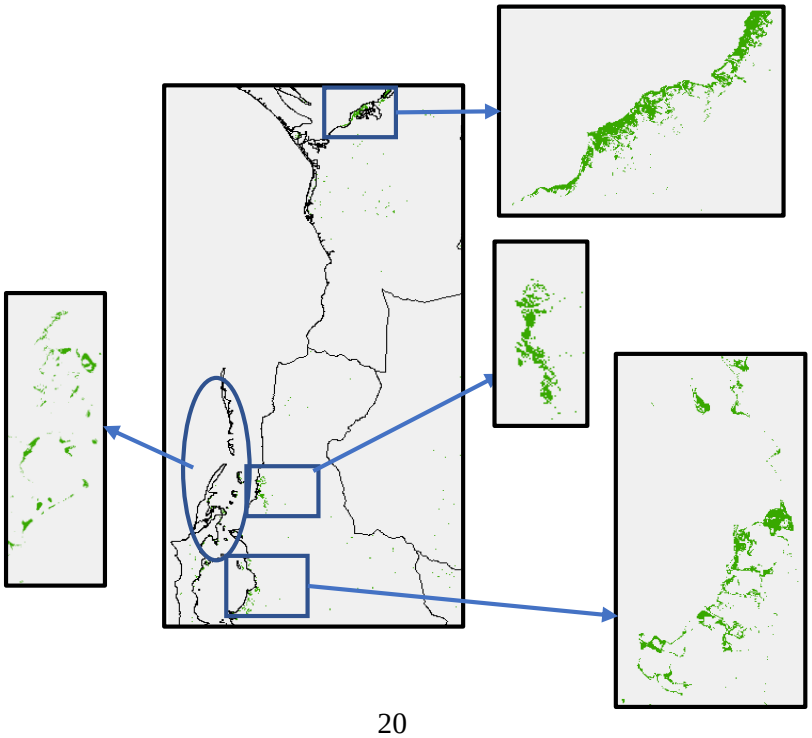


5.4 Research Projects in Remote Sensing (RS) and Geographic Information Systems (GIS)

Forest cover types mapping of Sri Lanka using Open Access Satellite data

Forest cover is a critical ecosystem component. The forests in Sri Lanka are categorized in to different types depend on their inherent characteristics (Dense Forests, Open and Sparse Forests, Scrublands, Mangrove, forest plantations (manmade forests), etc. For the better management and conservation activities it is real requirement to map the each category accurately. The conventional (Field Survey) methods are time consuming. Now the advanced earth observing satellites lead the foresters to map forest cover types to the approximately same uncertainty level as in situ measurements. This study aims to investigate the potential of use of Open Access Remote sensing optical and SAR (Synthetic Aperture Radar) data to monitor Forest cover types of Sri Lanka.

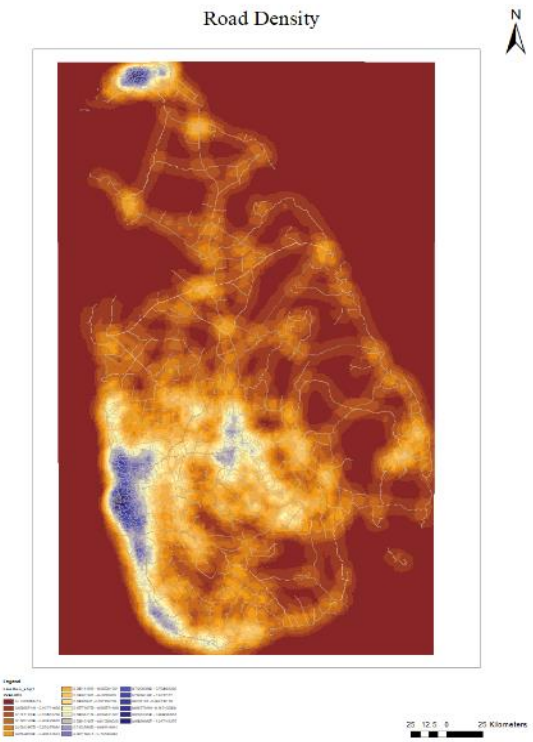
In this study, Mangrove mapping method was developed using sentinel-2 imagery. Combined Mangrove Recognition Index (CMRI), Normalized Difference Water index (NDWI) and Mangrove Forest Index (MFI) were integrated together with Random Forest Algorithm to separate Mangrove lands from other forest land covers.

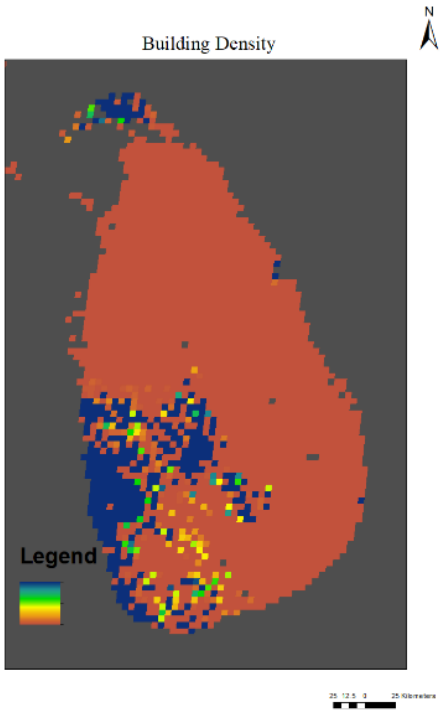


Method to Evaluate the Epidemiology of Covid-19 Using GIS and Cartography

The spread of COVID 19 has been very fast and widespread over the world. According to WHO, small indoor gatherings and crowded places are where corona virus is spreading the fastest. Space technology applications and remote sensing data can be used to provide important information to deal with the COVID 19 pandemic, especially regarding the information on potential risk zones. In this study, two types of data have been used which are remote sensing and non-remote sensing data. Landsat 8 Mosaic was used as remote sensing data COVID-19 data, hospital map, national road network, building map as non-remote sensing data. The method for determining the potential risk of COVID 19 can be conducted based on the development of the concept of disaster risk assessment which is used 3 parameters :(1)Hazard (2)Vulnerability and (3) Capacity.

In this study, the COVID 19 data was used which is available to the public by the epidemiology unit, Ministry of Health Sri Lanka. Due to the erroneous of data the model didn't give results and the data has requested again to re-conduct the analysis.





5.5 Establishment of a National Hub for Receiving and Distribution of Earth Observation Satellite Data

The project for establishment of a National Hub for receiving and redistribution of earth observation satellite data was initiated by ACCIMT with a view to developing the requisites of Satellite Ground Station infrastructure for receiving of such earth observation satellite data to enable access by the user agencies in the country. The proposed hub is envisaged to extend up to 3 satellite ground station systems.

The institute, considering the constraints on securing funding, and in keeping with common practice followed by the international earth observation satellite ground station operating community, explored opportunities for developing the first ground station at proposed national hub as a collaborative project; and managed to attract successfully the AIR-CAS, Aerospace Information Research Institute (AIR) under the Chinese Academy of Sciences

(CAS) of China, formerly the Institute of Remote Sensing and Digital Earth which is a major civilian earth observation satellite operator of China as the collaborating partner for the first ground station system.

The envisaged mode of collaboration is for AIR-CAS on its part to supply, install and commission the ground station equipment, and provide training to the nominated ACCIMT engineers at the expense of AIR-CAS and once the ground station is operational provide satellite imagery to ACCIMT, and access to other satellites desired by ACCIMT using the ground station equipment as may be mutually agreed upon between the parties; and for ACCIMT on its part to provide the land, building to accommodate the facility, other infrastructure of the site and technical operation of the facility.

While the AIR-CAS has indicated their intention to provide the satellite data over Sri Lanka (and its exclusive economic zone), captured from 3 satellite of GF-1 series, the ACCIMT is desirous of securing in addition the data from other higher resolution civilian earth observation satellite operated by China in view of their usefulness in better addressing the data requirements of the user agencies of Sri Lanka. It was in an effort to address the above need while obtaining the approval of the cabinet to proceed with the project the approval was also sought to initiate negotiations with relevant authorities of the Government of China to gain access to such additional Chinese satellites besides GF-1 series that RADI is expected to provide under the currently proposed arrangement. Such additional satellites from which such additional data are desired by ACCIMT include GF-2 series and GF-3 series satellites.

5.6 Research Publications and Participation in Conferences

1. A Brown Dwarf Companion to the Nova-like Variable RW Tri, Galaxies 2021, 9, 94. https://doi.org/10.3390/galaxies9040094

5.7 Test and Measurements, Hardware Recovery and Consultancy Services

Test and Measurement Services of Power Electronics Measurement Laboratory- Electronics and Microelectronics Division

During the year, the division issued 144 performance test reports mainly for testing of Batteries, Surge Protective Devices (SPDs), Plugs, Socket outlets, Switches, Residual Current Circuit Breakers(RCCB), Miniature Circuit Breakers (MCB) and Inverters. The division also carried out safety testing and power quality measurement of electrical / electronic products apart from the power quality measurements undertaken at customer locations. Key customers include, Douglas and Sons (Pvt) Ltd., Kevilton Electrical Products (Pvt.) Ltd., C.E.L.Lanka (Pvt.) Ltd, Sri Lanka Standards Institution and ACL Electric (Pvt.) Ltd.

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

During the year under review 51 consultancy and hardware recovery assignments were undertaken by the Electronics and Microelectronics division.

Key hardware recovery and consultancy assignments undertaken include;

- Repairing of the battery tester for NERD Center
- Repairing of PLC units for SD&CC
- Performance testing of an energiser for elephant fence for Sri Lanka Inventors Commission

Test and Measurements and Consultancy Services by Communication Division

Consultancy to the industry, testing of coaxial cables, network cables, antennas and RF equipment for the specifications/functionality and test and measurement services in the Radio Frequency applications were covered as activities under this category.

Consultancy work carried out to following companies.

- Brandix Pvt. Ltd.
- V-FM Broadcasting

Test and Measurement

Radio frequency measurement related activities conducted mainly for Police Communication Unit on specific requirements.

Instrument Calibration / Performance test services offered by the Calibration Laboratory - Industrial Services Division

Instrument calibration service mainly on Electronic and Electrical test instruments were performed during the year and eighty three calibration reports were issued. The instruments that were calibrated include Digital / Analogue Multimeters, Oscilloscopes, Scopemeter, AC/DC Clamp meters, High voltage testers, Hipot tester, Process meter, Power & Harmonic Analyzers, Watt meters, Volt meters, Portable Appliance testers, Insulation continuity testers, Earth testers, RCCB testers and Multifunction Tester.

Our key customers were LTL Transformers, Kohoku Lanka, MAS Fabrics (Pvt) Ltd, Ceylon Petroleum Corporation, Elevators (Pvt) Ltd, Professional MET Consultancy, Venora International, David Pieris Motor Company, Balfour Beatty, Pubudu Engineering (Pvt) Ltd, Richardson Projects (Pvt) Ltd, Electro Metal Pressing (Pvt) Ltd, Hayleys and Fentons Ltd.

Light Measurement Service offered by the LMS Laboratory - Industrial Services Division

Light measurement service to test LED and CFL lamps were carried out and ninety two test reports were issued with the collaboration of Sri Lanka Standard Institute. Our key customers were Orel Corporation, Kelani Cabals PLC, Soft Logic Retail (Pvt) Ltd, Chint Energy (Pvt) Ltd and Global Trading System (Pvt) Ltd.

6.1 Continuing Professional Development (CPD) Programmers for Professionals

CCTV Security Systems (ELV) configuration, installation and maintenance

One CPD programme (30 hours / weekends) conducted for 25 participants mainly from the Ministry of Science, Technology and Research (Vidatha Scientific Officers). The participants were given exposure on designing their own CCTV system using readily available components in the market. Main focus was to give participants knowledge on theory, hands-on exposure on individual components and to carry out their own commercial projects on return.

Programmable Logic Controller

Programmable Logic Controller, a five-day CPD Course on S7-1200 & S7 -200 PLCs was conducted for 31 technical personnel consisting engineers, technical officers and undergraduate student. The participants were given theoretical and practical knowledge on Programming PLCs and HMI devices used in Industrial automation.

Modern Electronic Test & Measuring Instruments with Digital Emphasis

One CPD course was conducted for 29 participants. The participants were given the knowledge and practical experience on usage, applications, advantages and limitations of modern electronics test and measuring instruments such as Oscilloscope, Spectrum analyzer, Logic analyzer, Transmission measurements, Earthing & Bonding, Calibration of instruments and Trouble shooting and maintenance of test & measuring instruments.

6.2 Basic and Intermediate Level Technical Training

Practical Electronic Course

A weekend training program (duration of 24 days) was scheduled and started to all sectors of community interested in learning electronics starting from basics. The numbers of participants attended were 60. The covered areas during the program were analog electronics, digital electronics, basic instruments and microcontrollers with hands on practical sessions. Due to the pandemic (Covid-19), the program had to be halted and will be recommenced in 2022.

Intermediate Workshop on Robotics

A 3-day training program was conducted for 8 participants and (Vidatha Scientific Officers) of the Ministry of Science, Technology and Research to expose them to basic theory and hands on experience on Robotics applications using robotic kits.

Workshop on introduction to Practical Astronomy

19th annual Workshop on introduction to astronomy was physically conducted with 30 number of participants at the ACCIMT. The number of participants was restricted to 30 students due to the Covid-19 pandemic situation.

6.3 Science & Technology Popularization and Information Dissemination Astronomy and Space Science Popularization Programs Water rocket Educational workshop & Water rocket Competition

The annual water rocket workshop and competition were held only due to the pandemic situation at restricted scale in collaboration with Asia Pacific Regional Space Agency Forum (APRSAF.) 4 students were selected for the international APRSAF water rocket competition.

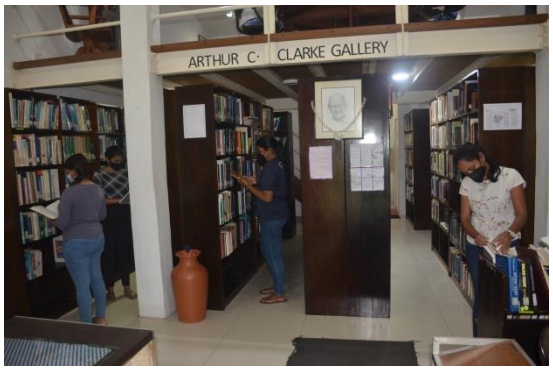
Due to the pandemic situation APRSAF members decided to hold the international competition in respective countries using accelerometer provided by the Vietnam Space Agency. The encrypted accelerometer results of Sri Lankan students then were uploaded to the APRSAF portal. All 4 students participated in the international water rocket workshop organized by the APRSAF via online. Students had the opportunity to present their own experience to the audience in various countries. Apart from this a school teacher was also participated in the water rocket educator's workshop via online and delivered the country presentation for Sri Lanka.

APRSAF International Poster Competition

The ACCIMT annually represents the APRSAF international poster competition with the posters drawn by the Sri Lankan students aged 8-11 years. The APRSAF organizing committee sent a collage of such posters to the International Space Station (ISS) through Space X rocket, Falcon 9 on 21st December 2021 to stimulate the interest of the kids on space.

6.4 ACCIMT Library

ACCIMT Library consists a fair collection of books, periodicals and other educational material in the fields of Communications, Information Technology, Electronics, Photonics, Robotics and Space Technology.



The key function of the library is to facilitate and provide access to necessary technical knowledge and information to professionals and personnel engaged in Research and Development projects, undergraduates, postgraduates, other students, etc.

Library Collection

The Library has a fair collection of very expensive specialized reports and publications with frequent updates obtained from reliable and independent organizations 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, VHS, VCDs, DVDs, CD-ROM data bases, standards etc. Also, the periodical section consists specific magazines dedicated to Communication, Information Technology, Space Technologies and Electronics.

Total collection:

Books	- 9124
CD-ROMs	- 745
Video Tapes	- 368
Audio Tapes	- 94
VCDs	- 130
DVDs	- 87

Services

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

(b) Reference Facilities: Visiting lecturers and instructors, undergraduate and postgraduate student engage in projects, Continuing Professional Development (CPD) course participants, and Personal and Institutional membership holders.

(c) Reader Services: Photocopying service, Scanning facility, Internet facility, Electronic Library facility, Inter library loans, Current Awareness Services, Information and document supply service, and Online catalogue.

(d) Service to Community: Membership offers for the professionals in the public and private sectors, Information & document supply service for professionals / scholars (a. Industrialists. b. University academics & researchers. c. General public with a special interests.), providing display items for exhibitions and Astronomy promotion programs.

Open Public Access Catalogue (OPAC) via Internet (http://www.accimt.ac.lk).

Information about the collection can be accessed through the ACCIMT Library on-line catalogue from the internet (www.accimt.ac.lk). (Computer facilities are also provided for our users to search and access the library collection via our LAN. The user can search for material by Author, Title or Key words.)

ACCIMT Library You Tube Channel

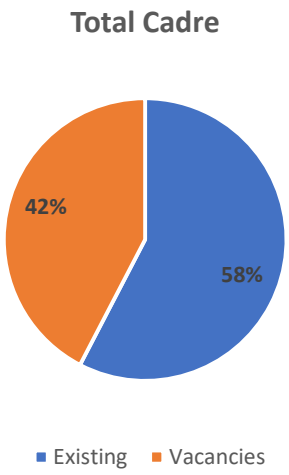
The ACCIMT Library offers Students and Researchers a selection of online resources via the Library's You Tube Channel.

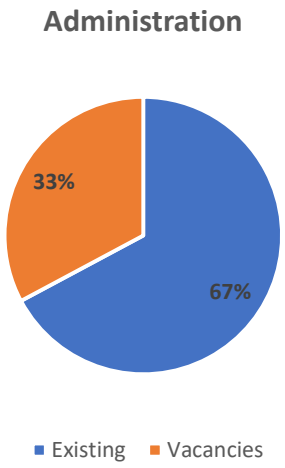
7. Human Resource Management

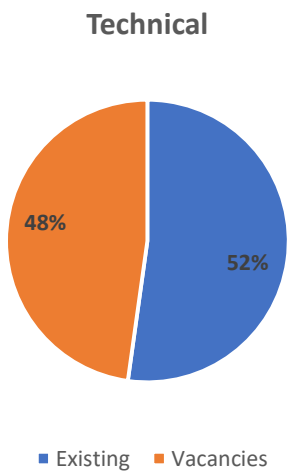
Total cadre positions approved by the Department of Management Services for the ACCIMT are 177. Out of that 102 positions have been filled and 75 positions remained vacant. Majority of vacancies are in technical fields, technical higher management (HM) and academic research (AR) categories, where prospective employee requires postgraduate or comparable qualification in engineering or equivalent professional qualification with necessary work experience.

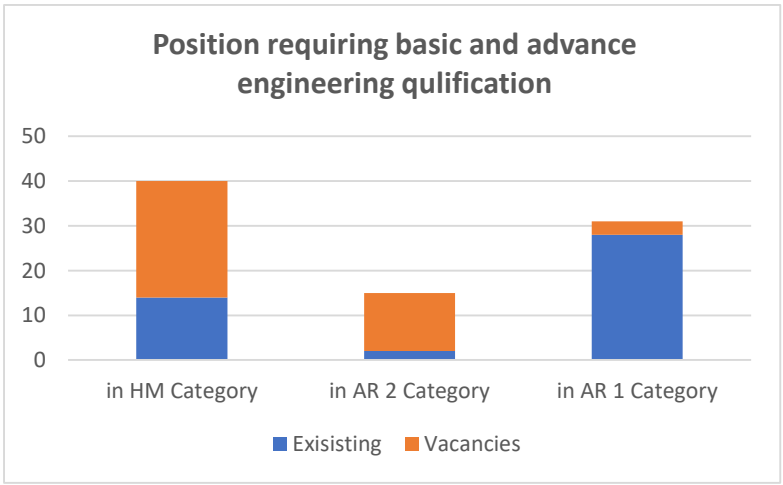
During the year under review twelve (12) new appointments were performed. The new recruitments include one Senior Research Engineer, three Research Engineers, one Research Scientist, three Electronic Engineers, two Software Engineers, one System Engineer and one Management Assistant.

During the year seven employees were resigned, including two Research Engineers, one Research Scientist, one Computer Programmer, one Engineering Assistant, one Management Assistant and one Office Aide citing personal reasons.









8. Financial Statements of Year 2020

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED 31ST DECEMBER, 2021.

	NOTES	2021 Rs.	2020 Rs.
REVENUE			
Government grant	(01)	205,428,016.74	196,079,400.75
Other income	(02)	24,772,746.88	12,809,243.10
Total revenue		230,200,763.62	208,888,643.85
EXPENSES			
Personal emoluments	(03)	123,762,364.90	118,641,811.23
Travelling expenses	(04)	118,548.26	126,444.42
Supplies and requisites	(05)	840,198.89	1,079,006.37
Repairs and maintenance	(06)	42,159,765.43	44,867,309.76
Utility and other services	(07)	19,251,255.61	24,261,382.72
Project expenses	(08)	13,959,795.55	3,950,270.61
Research and development expenses	(09)	22,069,563.95	11,881,688.22
Other operating expenses	(10)	333,954.06	165,438.37
TOTAL EXPENSES		222,495,446.65	204,973,351.70
NET SURPLUS/(DEFICIT) FOR THE PERIOD		7,705,316.97	3,915,292.15
Income & Expenditure Appropriation Account for the Year Ended 31.12.2021			
Net surplus/(deficit) for the period		7,705,316.97	3,915,292.15
Transfer of surplus out of generated funds from PC A/C	Schedule 01	(2,355,830.21)	(1,405,548.84)
NET PROFIT FOR THE YEAR		5,349,486.76	2,509,743.31

The significant accounting policies and notes from pages 6 to 13 form an integral part of these financial statements.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
STATEMENT OF FINANCIAL POSITION AS AT 31ST DECEMBER, 2021.

	NOTES	2021 Rs.	2020 Rs.
ASSETS			
Current assets			
Cash and cash equivalents	(11)	19,634,386.16	15,845,888.28
Short term investment	(12)	80,146,146.95	66,062,878.08
Trade and other receivables	(13)	9,231,082.44	34,644,499.35
Inventories	(14)	9,790,415.43	9,948,346.01
Prepayment	(15)	375,539.01	2,299,501.86
		119,177,569.99	128,801,113.58
Non-current assets			
Staff loan	(13.3)	9,042,870.00	10,578,037.00
Property, plant and equipment	(16)	217,659,197.60	251,368,693.41
Work in progress (construction)	(17)	3,545,744.40	3,656,008.40
		230,247,812.00	265,602,738.81
Total assets		349,425,381.99	394,403,852.39
EQUITY AND LIABILITIES			
Current liabilities			
Trade and other payables	(18)	5,844,939.76	3,502,147.05
Accrued expenses	(19)	3,768,840.40	7,527,825.82
		9,613,780.16	11,029,972.87
Non-current liabilities			
Differed income		2,024,713.56	11,206,591.00
Retirement benefit obligation	(20)	52,835,090.05	49,678,539.54
		54,859,803.61	60,885,130.54
Capital and reserves			
Capital contributed by government	(21)	322,052,586.25	366,957,831.68
Reserves	(22)	81,021,192.69	79,777,333.09
Accumulated deficit	(23)	(118,121,980.72)	(124,246,415.78)
		284,951,798.22	322,488,748.99
Total equity and liabilities		349,425,381.99	394,403,852.39

I certify that the financial statements comply with the requirements of the Sri Lanka Public Sector Accounting Standards (SLPSAS)

The Board of Directors is responsible for the preparation and presentation of these financial statements.
Signed for and on behalf of The Board by,

Chairman — **Director General / CEO** — **Senior Deputy Director (Finance) (Acting)**

February 28, 2022

The significant accounting policies and notes from pages 6 to 13 form an integral part of these financial statements.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES

STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 31ST DECEMBER, 2021

Cash Flows From Operating Activities	2021	2020
	Rs.	Rs.
Surplus/(deficit) for the period	5,349,486.76	2,509,743.31
Non-cash movements		
Depreciation	34,896,452.79	39,109,712.53
Amortization	(34,896,452.79)	(39,109,712.53)
Provision for Bad Debts	5,773,028.43	4,261,052.81
Provision for Defined Benefit Plans	4,150,710.51	7,079,173.26
Accumulated profit Adjustments	46,440.53	(344,575.45)
Interest Income - Fixed Deposits	(1,106,412.21)	(280,841.62)
Interest Income - Treasury Bills	(545,807.38)	(734,201.74)
Government Grant - Capital Grant	(22,051,563.95)	(11,869,688.22)
Operating Profit/(Loss) before Working Capital Changes	**(8,384,117.31)**	**620,662.35**
(Increase)/ Decrease in Trade and Other Receivables	19,640,388.48	(5,400,367.00)
Decrease / (Increase) in Inventories	157,930.58	178,419.42
(Increase)/ Decrease in Prepayment	1,923,962.85	1,599,106.80
Increase/ (Decrease) in Payables	2,342,792.71	(10,159,195.78)
Increase/ (Decrease) in Accrued Expenses	(3,758,985.42)	479,969.45
Cash Generated from Operations	**11,921,971.89**	**(12,681,404.76)**
Defined Benefit Plan Costs paid	(994,160.00)	(472,637.50)
Interest Income Received - Fixed Deposits	1,106,412.21	280,841.62
Interest Income Received - Treasury Bills	545,807.38	734,201.74
Profit/Loss on Disposal of Assets	-	(43,533.84)
Deferred Revenue	(9,181,877.44)	6,607,193.42
Net Cash From/(Used in) Operating Activities	**(8,523,817.85)**	**7,106,065.44**
Cash Flows from / (Used in) Investing Activities		
Acquisition of Property, Plant & Equipment	(1,233,397.51)	(8,626,964.80)
Short Term Investments	(14,083,268.87)	(6,613,121.20)
Movement Staff Loans	1,535,167.00	1,675,721.00
Proceeds from disposal of property, plant and equipment	-	52,912.00
Movement Capital Work in Progress	110,264.00	-
Net Cash Flows from/(Used in) Investing Activities	**(13,671,235.38)**	**(13,511,453.00)**
Cash Flows from (Used in) Financing Activities		
Proceeds From Capital Grant	11,740,000.00	29,117,000.00
Proceeds From Capital Ministry Grant	-	-
Capital Grant Utilization	-	-
Movement Reserves	2,321,579.22	1,345,818.77
Net Cash Flows from/(Used in) Financing Activities	**14,061,579.22**	**30,462,818.77**
Net Increase/(Decrease) in Cash and Cash Equivalents	**3,788,497.88**	**11,376,026.45**
Cash and Cash Equivalents at the beginning of the year	15,845,888.28	4,469,861.83
Cash and Cash Equivalents at the end of the year	**19,634,386.16**	**15,845,888.28**

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES

Statement of Changes in Net Assets / Equity for the Year Ended 31st December 2021

Rs. 000s

	Govt.Capital Grant	Govt.Capital Grant (Non Monetary)	Ministry Capital Grant	General Reserve	Celltel Donation	R & C Fund	Foreign Grant	Re-Valuation Surplus	Research Pool	Other Grants & Donations	Revolving Fund	Directors Fund	FINDS Grant	NASDA Grant	Accumulated Surplus/ (Deficit)	Total
Balance as at 1st Jan 2020	373,943	1,411	13,156	273	213	1,341	3,464	26,683	176	23,376	13,714	1,508	7,675	8	(126,597)	340,344
Grants received	29,117															29,117
Amortization	(37,522)	(1,278)														(38,800)
Capacity Building Programme	(11,870)															(11,870)
Gain on Fixed Assets Revaluation																0
Fixed Assets/Tools																0
Depreciation										(310)						(310)
Other Receipts									30		150					180
Interest Income											841	166	580			1,587
Adjustments											(48)	(63)			(158)	(269)
Expenses																0
Surplus for the period															2,509	2,509
Balance as at 31st Dec 2020	353,668	133	13,156	273	213	1,341	3,464	26,683	206	23,066	14,657	1,611	8,255	8	(124,246)	322,488

Balance as at 1st Jan 2021	353,668	133	13,156	273	213	1,341	3,464	26,683	206	23,066	14,657	1,611	8,255	8	(124,246)	322,488
Grants received	11,740															11,740
Amortization	(34,460)	(133)														(34,593)
Capacity Building Programme	(22,052)															(22,052)
Gain on Fixed Assets Revaluation																0
Fixed Assets/Tools																0
Depreciation										(302)						(302)
Other Receipts											429					429
Interest Income											608	88	426	0.215		1,122
Adjustments															775	775
Expenses									(4)					(0.300)		(4)
Surplus for the period															5,349	5,349
Balance as at 31st Dec 2021	**308,896**	**0**	**13,156**	**273**	**213**	**1,341**	**3,464**	**26,683**	**202**	**22,764**	**15,694**	**1,699**	**8,681**	**7**	**(118,122)**	**284,951**

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021.

General Policies

Reporting Entity

Arthur C Clarke Institute for Modern Technologies (hereafter referred to as the "Institute") was incorporated by the Science and Technology Development Act No.11 of 1994, and is situated at Bandaranayake Mawatha, Katubedda, Moratuwa.

Principal Activities and Nature of Operations

The Principal activities of the Institute are:

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 and technology, electronics, telecommunications, micro electronics, space technologies, robotics, photonics and new materials.

The number of employees

The number of permanent employees as at the end of the reporting period was 102.

Basis of preparation

a) Statement of compliance

The financial statements comprise the Statement of financial Position, Statement of Financial Performance, Statement of Changes in Net Assets/Equity, Cash Flow Statement and notes to the financial statements. These statements have been prepared in accordance with the Sri Lanka Public Sector Accounting Standards (SLPSAS) issued by the Institute of Chartered Accountants of Sri Lanka.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

b) Basis of measurement

The financial statements have been prepared on historical cost basis except where the appropriate disclosures are made with regard to fair value under the relevant notes.

c) Comparative Information

Comparative information including quantitative, narrative and descriptive is disclosed in respect of the previous period for all amounts reported in the financial statements in order to enhance the understanding of the financial statements of the current period and to improve inter-period comparability.

The accounting policies set out below have been applied consistently to all periods presented in these financial statements, unless otherwise indicated.

d) Functional and presentation currency

The financial statements are presented in Sri Lankan Rupees, (LKR) which is the functional and presentation currency of the institute.

All financial information presented in Sri Lankan Rupees has been rounded to the nearest thousand, unless stated otherwise.

e) Use of estimates and Judgements

The preparation and presentation of financial statements in conformity with SLPSAS requires management to make judgments, estimates and assumptions that effect the application of accounting policies and reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates and judgments used.

Estimates and underlying assumptions are reviewed on an on-going basis. Revisions to accounting estimates are recognized in the period in which the estimates is revised if the revision effect only that period or in the period of the revision and future periods if the revision effect both current and future periods.

Information about significant areas of estimates, uncertainty and critical judgments in applying accounting policies that have the most significant effects on the amounts recognized in the financial statements is included in the notes to the financial statements.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES

NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

Assets and the bases of their valuation

Property, plant and equipment

a) **Recognition and measurement**

Items of property, plant and equipment are stated at cost or at fair value less accumulated depreciation.

All items of property, plant and equipment are initially recorded at cost less accumulated depreciation. Significant components of an asset are identified and depreciated separately. When significant parts of property, plant and equipment are required to be replaced at intervals, the entity derecognizes the replaced part, and recognizes the new part with its associated useful life and depreciation. All other repair and maintenance costs are recognized in the income statement as incurred.

b) Cost

The cost of property, plant and equipment is the cost of acquisition or construction together with any incidental expenses thereon.

The cost of property, plant and equipment comprises its purchase price and any directly attributable cost of bringing the asset to working condition for its intended use.

Subsequent expenditure incurred for the purpose of acquiring, extending or improving assets of a permanent nature in order to carry on or increase the earning capacity of the assets has been treated as capital expenditure.

Expenditure incurred to replace a component of an item of property, plant and equipment that is accounted for separately, including major inspection overhaul expenditure, is capitalized. Other subsequent expenditure is capitalized only if it is probable that the future economic benefits embodied within the part will flow to the institute and its cost can be measured reliably.

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 the Institute. If Institute 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 the Institute.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

c) Depreciation

Depreciation is not charged on freehold land and construction in progress. Depreciation is charged on all other Property, Plant & Equipment on the straight-line basis over the estimated useful lives by equal installments as follows.

Asset Category	% per Annum
Building	5
Computers & Peripherals	20
Satellite Antenna, Lab Equipment	10
Office Equipment, Furniture & Fittings	10
Motor Vehicles	20
Library Books	15

Depreciation of an asset acquired begins when it is available for use whereas depreciation of an asset ceases at the earlier of the date that the asset is classified as held for sale and the date that the asset is derecognized.

Inventories

Inventories consist of Stationery Stock Items, Electronic Components, Accessories and Tools etc. Inventories are stated at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business less the estimated cost of completion and selling expenses.

Trade and Other Receivables

Trade receivables are stated at the amounts they are estimated to realize net of allowances for bad and doubtful receivables.

Other receivables and dues from Related Parties are recognized at cost less allowances for bad and doubtful receivables.

General Bad Debt Provision is determined as follows:

Overdue Period	Provision Required
1 – 2 years	50%
2 – 3 years	75%
More than 3 years	100%

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

Investments

Funds are invested only in government securities and fixed deposits in state owned banks. Investments are made after considering the higher yield on investment, liquidity and interest rate risk for reinvestment. All new investment and reinvestment decisions require the approval of the board of governance.

Cash and Cash Equivalents

Cash and cash equivalents are cash in hand, demand deposits and short-term highly liquid investments, readily convertible to known amounts of cash and subject to insignificant risk of changes in value.

For the purpose of cash flow statement, cash and cash equivalents consist of cash in hand and deposits in banks net of outstanding bank overdrafts.

Liabilities and provisions

Liabilities classified as current liabilities on the Statement of Financial Position are those which fall due for payment on demand or within one year from the reporting date. Non-current liabilities are those balances that fall due for payment after one year from the reporting date.

All known liabilities have been accounted for in preparing these financial statements. Provisions and liabilities are recognized when the Institute has a legal or constructive obligation as a result of a past event and it is probable that an outflow of economic benefits will be required to settle the obligation.

Employee Benefits

a) **Defined Benefit Plans**

Gratuity is a defined benefit plan. In order to meet this liability, a provision is carried forward in the statement of Financial Position. The provision is calculated based on a formula method considering the future salary increment rates, discount rates and the expected staff turnover rate the resulting difference between the brought forward provision at the beginning of the year and the carried forward provision at the end of the year is dealt within the statement of comprehensive income. However, as per the payment of Gratuity Act No. 12 of 1983, Gratuity liability is not externally funded. This liability is grouped under non- current liabilities is the statement of Financial Position.

b) **Employees' Provident Fund**

Employees are eligible for employees provident fund contribution in line with respective statutes and regulations. The institute and employees contribute 15% and 10% respectively. The institute contribution recognized as an expense in the statement of comprehensive income as incurred.

c) **Employees' Trust Fund**

Employees are eligible for employees provident fund contribution in line with respective statutes and regulations. The institute contributes 3% of gross emoluments of the employee to employee trust fund. These are recognized as an expense in the statement of comprehensive income as incurred.

Trade and other payables

Trade and other payables are stated at cost.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

Taxation

The Institute is exempt from Income Tax under Section 7 (b) (ii) of the Inland Revenue Act. No. 10 of 2006.

Capital commitments and contingent liabilities

Contingent liabilities are possible obligations whose existence will be confirmed only by uncertain future events or present obligations where the transfer of economic benefits is not probable or cannot be reliably measured. Capital commitments and contingent liabilities of the Institute are disclosed in the respective notes to the financial statements.

Accounting for Grants

Grants that compensate the Institute for expenses incurred are recognized as revenue in the Statement of Financial Performance in the same period in which the expenses are recognized. Grants that compensate the Institute for the cost of an asset are recognized in the income statement on a systematic basis over the useful life of the related asset.

Grants related to specific projects

Where grants/donations are received for use in an identified project or activity, such funds are held in a restricted fund account and transferred to the statement of financial performance, income to match with expenses incurred in respect of that identified project. Unutilized funds are held in their respective fund accounts and included under accumulated fund and reserves in the statement of financial position until such time as they are required

Revenue Recognition

Revenue is recognized to the extent that it is probable that the economic benefits will flow to Institute and that it can be reliably measured.

a) Course fees from students are recognized as revenue on accrual basis.
b) Project income, consultancy income are recognized as revenue on accrual basis
c) Interest income is recognized on accrual basis.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

Revenue Recognition (Continued)

d) Grants related income is recognized when control of the contribution or right to receive the contribution is confirmed.

e) Other income is recognized on accrual basis.

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.

Expenditure

a) Expenses are recognized in the Statement of Financial Performance on the basis of direct association between the cost incurred and the earning of specific items of income. All expenditure incurred in the running of the Institute and in maintaining the capital assets in a state of efficiency has been charged against revenue in arriving at the surplus for the year.

b) Expenditure on courses, projects, consultancy works and other activities are recognized in the Statement of Financial Performance on accrual basis.

Cash Flow Statement

The cash flow statements have been prepared by using the indirect method of preparing of cash flows in accordance with SLPSAS 2.

Events after the reporting date

The materiality of events occurring after the reporting date has been considered and appropriate adjustments, wherever necessary, have been made in the financial statements.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
SCHEDULES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER 2021. (CONTINUED)

	2021 Rs.	2020 Rs.
(01) REVENUE - GOVERNMENT GRANT		
Amortization	34,896,452.79	39,109,712.53
Government grant - Capacity buildings	22,051,563.95	11,869,688.22
Recurrent grant	148,480,000.00	145,100,000.00
	205,428,016.74	196,079,400.75
(02) OTHER INCOME		
Course fees	83,400.00	2,730,475.00
Interest income	620,425.07	1,456,579.55
Interest income on fixed deposits	1,106,412.21	280,841.62
Interest income on treasury bills	545,807.38	734,201.74
Profit from disposal of assets	-	43,533.84
Project income / Consultancy income	20,647,007.99	5,842,852.46
Other Income	1,341,422.94	1,287,110.08
Sundry income	428,271.29	385,648.81
Tender deposits	-	48,000.00
	24,772,746.88	12,809,243.10
(03) PERSONNEL EMOLUMENTS		
Allowance to board members	265,500.00	232,500.00
E.P.F.	11,901,583.76	11,388,288.25
E.T.F.	2,380,316.27	2,275,407.72
Engineering allowance	4,722,532.00	3,487,422.41
Fuel allowance	3,358,939.00	2,904,349.68
Gratuity	4,150,710.51	7,079,173.26
Other allowances	2,102,911.00	2,902,311.50
Overtime and holiday pay	1,430,889.90	1,847,690.23
Professional allowance	2,106,000.00	2,004,454.19
Salaries and wages	79,070,847.46	75,974,730.12
Vehicle allowance	8,646,774.00	7,285,483.87
Chartered Allowance	1,291,834.00	1,260,000.00
Telephone Allowance	2,333,527.00	
	123,762,364.90	118,641,811.23
(04) TRAVELLING EXPENSES		
Travelling - Local	118,548.26	126,444.42
Travelling - Overseas	-	
	118,548.26	126,444.42

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
SCHEDULES TO THE FINANCIAL STATEMENTS -31ST DECEMBER 2021. (CONTINUED)

	2021 Rs.	2020 Rs.
(05) SUPPLIES AND REQUISITIES		
Exhibitions and seminars	1,500.00	-
Fuel	59,321.62	79,872.51
Mech and elect goods / Lab components	17,926.45	28,850.08
Periodicals	-	2,942.00
Stationery and office requisites	241,675.00	454,665.78
Stock damages	75,945.34	-
Uniforms	108,000.00	117,000.00
Welfare items	335,830.48	395,676.00
	840,198.89	1,079,006.37
(06) REPAIRS AND MAINTENANCE		
Buildings	5,343,376.74	4,313,963.72
Computers	451,170.00	89,605.00
Depreciation	34,896,452.79	39,109,712.53
Lab Equipment	510,086.01	5,387.64
100KVA Generator	43,000.00	145,792.00
Furniture & Fittings	-	-
Motor vehicles	121,601.06	328,595.54
Office equipment	794,078.83	874,253.33
	42,159,765.43	44,867,309.76
(07) TRANSPORTATION,COMMUNICATION UTILITY AND OTHER SERVICES		
Advertisement	502,551.00	1,020,573.00
Audit fees	300,000.00	350,000.00
Bank charges	27,620.00	60,790.00
Electricity	2,854,778.40	3,681,301.63
Hospitality and entertainment	59,763.25	98,190.39
Insurance	3,607,683.62	6,837,716.11
License fees	119,598.68	146,838.09
Nation building tax expenses	-	712.50
Other expenses	1,093,351.53	912,063.21
Postage	38,965.00	37,790.00
Security	3,177,283.07	3,002,802.60
Stamp duty	2,350.00	2,100.00
Telephone	4,443,562.71	6,256,084.74
VAT expenses	-	9,810.00
Water	142,784.07	208,192.87
Annual Report 2017	142,751.50	112,013.00
Annual Report 2015	1,860.00	
Annual report 2016	128,365.00	
Annual Report 2018	489,660.00	58,180.00
Annual Report 2019	598,154.16	37,855.00
Annual report 2020	8,198.00	
Bad Debts	1,511,975.62	1,428,369.58
	19,251,255.61	24,261,382.72

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
SCHEDULES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER 2021. (CONTINUED)

	2021 Rs.	2020 Rs.
(08) PROJECT EXPENSES		
Courses / Projects	13,959,795.55	3,950,270.61
	13,959,795.55	3,950,270.61
(09) RESEARCH AND DEVELOPMENT EXPENSES		
Research and development expenses	22,051,563.95	11,869,688.22
Consultancy Fees	18,000.00	12,000.00
	22,069,563.95	11,881,688.22
(10) OTHER OPERATING EXPENSES		
Membership fees	130,954.06	161,438.37
Professional fees	-	-
Staff training	203,000.00	4,000.00
	333,954.06	165,438.37

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

(11) CASH AND CASH EQUIVALENTS	2021 Rs.	2020 Rs.
Current accounts	-	-
Bank of Ceylon		
- A/c No 7054733	17,063,415.48	8,223,710.30
- A/c No 307144	96,788.88	5,595,971.23
- A/c No 307399 (Directors Fund)	1,866.46	1,866.46
- A/c No2479737 (Revolving Fund)	1,615,848.40	1,186,597.28
Peoples Bank		
- A/c No 313-1-001-9-0012847	678,804.83	678,804.83
Commercial Bank of Ceylon PLC		
-A/c No 1114029211	26,500.00	26,500.00
Savings account	-	-
Bank of Ceylon		
-A/c No 326764 (FINDS)	129,029.57	125,220.94
-A/c No 328391 (NASDA)	7,132.54	7,217.24
Imprest		
Board Memebres Travelling	3,000.00	
Board Members Imprest	12,000.00	
Cash and cash equivalents for the purpose of statement of cash flows.	19,634,386.16	15,845,888.28

(12) INVESTMENTS		
Invest. of surplus funds in Treas.Bills - Projects/Courses Fund	11,285,897.37	10,657,579.96
Invest. of surplus funds in Treas.Bills - Directors Fund		-
Invest. of surplus funds in Treas.Bills - Revolving Fund	2,225,066.61	2,126,143.60
Invest. of surplus funds in Treas.Bills - FINDS Grant	8,471,067.66	8,094,664.27
Fixed Deposit 01(76387182)-Revo.Fund	742,032.49	713,626.60
Fixed Deposit 02(76387290)-Revo.Fund	742,032.49	713,626.60
Fixed Deposit 03(76387299)-Revo.Fund	742,032.49	713,626.60
Fixed Deposit 04(76387310)-Revo.Fund	742,032.49	713,626.60
Fixed Deposit 05(76387322)-Revo.Fund	742,032.49	713,626.60
Fixed Deposit 06(76387328)-Revo.Fund	742,032.49	713,626.60
Fixed Deposit 07(76387343)-Revo.Fund	742,032.49	713,626.60
Fixed Deposit 25(81820199)-Dir.Fund	32,380.28	30,765.11
Fixed Deposit 08(81819773) -Proj.Fund	7,054,324.92	6,702,446.48
Fixed Deposit 09(81819900) - Proj Fund(6 Month)	692,261.42	659,715.39
Fixed Deposit 10(81819988) - Proj.Fund (6 month)	692,261.42	659,715.39
Fixed Deposit 11(81820008) Proj.Fund(6 Month)	692,261.42	659,715.39
Fixed Deposit 12(81820127) - Proj. Fund(6 Month)	692,261.42	659,715.39
Fixed Deposit 13(81820031) - Proj.Fund (3 Month)	678,567.35	648,142.78
Fixed Deposit 14(81820049) - Proj.Fund (3 Month)	678.567.27	648,142.78
Fixed Deposit 15(81820073) - Proj.Fund(1 Month)	630,334.92	604,358.72
Fixed Deposit 16 (81820087) Revo. Fund(1 month)	630,334.92	604,358.72
Fixed Deposit 17 (81820099) - Revol Fund(1 Month)	630,334.92	604,358.72
Fixed Deposit 18 (81820155) - Revol Fund(1 Month)	-	607,703.48
Fixed Deposit 19 (81820136) - Revol Fund(1 Month)	630.334.92	604.358.72
Fixed Deposit 20 (81820174) - Revol Fund(1 Month)	630.334.92	604.358.72
Fixed Deposit 21 (81820186) - Revol Fund(1 Month)	630,334.92	604,358.72
c/f	42,171,154.09	40,775,988.54

Notes to the financial statements continued on page 18.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

		2021 Rs.	2020 Rs.
(12) INVESTMENTS (CONTINUED)			
b/f		42,171,154.09	40,775,988.54
Fixed Deposit 22 (81820244) - Revol Fund(1 Month)		630,334.92	604,358.72
Fixed Deposit 23 (81820190) - Revol Fund(6 Month)		692,261.42	659,715.39
Fixed Deposit 24 (81820194) - Revol Fund(6 Month)		553,809.13	527,772.32
Fixed deposit 26(81820180) - Proj Fund(1 Month)		630,334.93	604,358.73
Fixed Deposit -83214406 (DF)		1,637,110.11	1,551,319.99
Fixed Deposit 27(83203809)Revo Fund		954,657.55	904,888.73
Fixed deposit 28(87799992) Revo Fund		633,823.45	-
Fund Management A/c(82097803)		32,242,661.35	20,434,475.66
		80,146,146.95	66,062,878.08

The above investments are short term period and continue more than one year. Therefore It was not classified as cash and cash equievalant.

(13) TRADE AND OTHER RECEIVABLES

Staff Debtor - TG	**(Schedule 02)**	302.00	302.00
Insurance Corporation Debtor		9,700.00	9,700.00
Accounts Receivable - TG	**(Schedule 02)**	3,229,297.35	3,233,880.52
Accounts Receivable - P/C	**(Schedule 02)**	4,570,600.73	4,474,141.66
Debtor - Mr P T Fernando		4,000.00	4,000.00
Accounts Receivable PF	**(Schedule 02)**	323,940.13	397,655.20
Accounts Receivable RF	**(Schedule 02)**	52,826.17	38,382.83
Accounts Receivable - FINDS	**(Schedule 02)**	102,674.05	56,718.31
Debtor - T N Wickramasinghe			
Debtor - Mr.Jayathu Fernando		106,894.72	106,894.72
Debtor - Mr B R P Perera		39,699.66	39,699.66
Debtor - P P K Rodrigo		15,652.69	15,652.69
Debtor - Depart. Of Building		-	144,563.64
Other Deposits		155,315.00	155,315.00
R.S.Debtor		14,434.91	14,434.91
Elections Dept		8,159.60	8,159.60
Ministry Debtor - Dish TV Package		33,381.50	33,381.50
Festival Advance	**(Schedule 03)**	13,750.00	570,000.00
Advances to Public Officers		-	7,600.00
PC Control		(3,450,474.49)	(5,120,536.07)
Debtor-L V Wijesinghe		627.00	627.00
Debtor - P D T De silva		9,711.80	9,711.80
Debtor-Y sagarage		3,750.00	-
Bank Gurantee		600,000.00	-
		5,844,242.82	4,200,284.97

Notes to the financial statements continued on page 19.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

	2021 Rs.	2020 Rs.
(13.1) Work in progress - Projects		
WIP - UAVAGR	-	828,187.91
WIP - UGVMED	-	102,200.00
WIP - UAVGCS Project	-	678,815.47
2012/2013/SS/CCTV/NWSDB	-	4,222,053.46
ACCR Project 2020 - ISD	-	41,925.00
Teleshop Project	-	1,468.00
SCADA Project	48,489.00	900.00
TEATEP Proj 2020	-	2,376,851.58
RAWLM Project 2019/COM	-	268,752.60
AWSETP 2020	-	526,699.80
National Hub Project (SAD)	-	219,879.04
Nano Sattelite Programme SAD (CAPITAL)	-	4,489,814.04
Alarm wear Project 2020	-	95,840.95
Establishing a Center for Lightning Protection(ECLP)	148,750.96	119,471.96
PDM II project 2021 (Elec Div)	67,111.79	
SOILRE project(Elec Div)	-	4,250.00
THD Project 2021 (ISD Div)	29,728.37	
THTRI Projcect (com Div)	133,494.53	
IRR Matara Project (Com Div)	304,985.96	297,858.96
Cultiv.Paddy area ident.& Yield Prediction(SAD)2019	-	4,475.00
NASTEM project (com Div)	516,820.44	
PDM Project 2019	-	9,150.34
PT POC Project (Elec)	244,967.18	217,140.31
DT BAT prject (Elec Div)	18,328.45	
Tea Quality Grading & Colour Seperating System Project	-	11,247,497.23
Callisto Radio Spectrometer Project	92,772.52	50,186.50

Notes to the financial statements continued on page 20.

Automated Irrigation System (ELE)	-	22,107.72
ECGTA Project (Elec Div)	-	109,602.82
	1,605,449.20	25,935,128.69

Notes to the financial statements continued on page 21.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

		2021 Rs.	2020 Rs.
(13.2) Work in Progress - Courses			
PEC 27 2020 (com div)		347,587.85	245,336.50
(13.3) Staff loan			
Distress loan	**(Schedule 04)**	12,677,562.00	14,704,102.00
Motor cycle loan	**(Schedule 05)**	578,399.00	738,337.00
Motor vehicle loan	**(Schedule 06)**	2,993,740.00	3,660,400.00
Flood relief loan	**(Schedule 06)**	-	-
		16,249,701.00	19,102,839.00
Staff loan after one year		(9,042,870.00)	(10,578,037.00)
Staff loan with in one year		7,206,831.00	8,524,802.00
Trade and other receivable		15,004,110.87	38,905,552.16
Less:			
Provision for bad debts		(5,773,028.43)	(4,261,052.81)
		9,231,082.44	34,644,499.35
(14) INVENTORIES			
Electronic components		3,608,547.36	3,621,808.19
Stationery		1,790,473.17	1,945,296.60
Others		23,633.73	29,790.64
Electrical and mechanical		184,773.55	203,648.96
Welfare		72,723.00	37,537.00
Accessories -TG		199,218.03	199,218.03
Inventory items - TG		518,035.98	518,035.98
Inventory items - Projects (P/C)		2,000,013.92	2,000,013.92
Tools - TG		1,392,996.69	1,392,996.69
		9,790,415.43	9,948,346.01
(15) PREPAYMENT			
Payment in advance - TG	**(Schedule 07)**	324,462.01	1,431,296.57
Payment In Advance - PC	**(Schedule 07)**	15,000.00	137,524.35
Stamp Imprest		36,077.00	9,032.00
SDB-Project		-	721,648.94
SDB-Equipment			
		375,539.01	2,299,501.86

Notes to the financial statements continued on page 22.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

(16) PROPERTY, PLANT AND EQUIPMENT

	As at 01st January, 2021	Additions	(Disposals) / Adjustments	As at 31st December, 2021
	Rs.	Rs.	Rs.	Rs.
Cost				
Freehold assets				
Building	182,714,758.01			182,714,758.01
Satellite antenna	2,959,797.83			2,959,797.83
Computers	77,552,461.26	695,600.00		78,248,061.26
Lab equipment	256,102,900.19	147,827.66		256,250,727.85
Office equipment	40,803,788.58	161,362.00		40,965,150.58
Furniture and fittings	20,073,460.86	141,651.50	(59,725.65)	20,155,386.71
Motor vehicle	28,785,689.00			28,785,689.00
Library books	24,427,283.97	146,682.00		24,573,965.97
	633,420,139.70	1,293,123.16	(59,725.65)	634,653,537.21
Accumulated depreciation				
Freehold assets				
Building	69,707,846.57	9,135,737.90		78,843,584.47
Satellite antenna	2,959,778.83	-		2,959,778.83
Computers	58,025,211.80	5,281,657.64		63,306,869.44
Lab equipment	162,654,018.24	16,127,731.48		178,781,749.72
Office equipment	23,772,726.70	2,675,070.78		26,447,797.48
Furniture and fittings	12,430,890.29	1,496,717.07	46,440.53	13,974,047.89
Motor vehicle	28,479,789.47	65,440.00		28,545,229.47
Library books	24,021,184.39	114,097.92		24,135,282.31
	382,051,446.29	34,896,452.79	46,440.53	416,994,339.61
Carrying value	251,368,693.41			217,659,197.60

Notes to the financial statements continued on page 23.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

		2021 Rs.	2020 Rs.
(17) WORK IN PROGRESS - CONSTRUCTION			
WIP - Furniture and fitting(Lunch room)		-	110,264.00
WIP Buil - Demarcation and protection(Pitipana)		3,545,744.40	3,545,744.40
		3,545,744.40	3,656,008.40
(18) TRADE AND OTHER PAYABLES			
Accounts payable -TG	(Schedule 08)	284,717.10	285,223.58
Accounts payable -PC	(Schedule 08)	71,190.00	79,530.70
Salaries & Wages Control		-	174,525.00
E.P.F. control		1,725,956.65	1,563,882.02
E.T.F. control		207,114.80	187,665.84
Welfare society control		-	-
Creditor - General treasury		1,391,884.00	900,764.56
Refundable deposit		87,600.00	-
VAT Payable on receipts - P/C		38,219.71	38,219.71
Welfare society control		200.00	-
NBT payable - TG			
NBT payable - P/C		6,080.00	6,080.00
Stamp duty payable - TG		9,425.00	9,200.00
Payee tax payable - TG		11,943.00	1,366.00
Disbursement control		3,088,216.57	2,501,217.45
Buildings dept creditor		984,403.00	984,403.00
Arpico interiors - Creditor		14,377.61	14,377.61
TG Control		(3,450,474.49)	(5,120,536.07)
Retention		1,339,624.66	1,817,186.03
Creditor - T N Wickramasinghe		-	7,894.45
Creditor - W D Chamika		8,535.13	8,535.13
Creditor - T Dayaratne		-	8,323.89
Creditor - H Wijesuriya		25,827.02	22,627.66
Creditor - P Mahadevan		-	7,283.49
Creditor - N A A N Dilrukshi		-	4,377.00
Trade union control		100.00	
		5,844,939.76	3,502,147.05
(19) ACCRUED EXPENSES			
Treasury fund	(Schedule 09)	3,504,062.40	5,961,025.82
Projects / Courses	(Schedule 09)	264,778.00	1,566,800.00
		3,768,840.40	7,527,825.82

Notes to the financial statements continued on page 24.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER, 2021. (CONTINUED)

		2021 Rs.	2020 Rs.
(20) RETIREMENT BENEFIT OBLIGATION			
Balance at the beginning of the year		49,678,539.54	43,072,003.78
Add :			
Provision for the year		4,150,710.51	7,079,173.26
		53,829,250.05	50,151,177.04
Less :			
Payments made during the year		(994,160.00)	(472,637.50)
Balance at the end of the year	(Schedule 10)	52,835,090.05	49,678,539.54
ASSUMTIONS FOR RETIREMENT BENEFIT OBLIGATION			
Discount rate		6.50%	6.50%
Salary increment		8.00%	8.00%
Staff turnover		7.03%	8.93%
Retirement age		62 years	60 years
Net Assets / Equity			
(21) Government Capital Grant			
Balance at the beginning		353,668,028.23	373,942,879.87
Grants received during the period		11,740,000.00	29,117,000.00
Adjustments		-	-
Capacity building programme		(22,051,563.95)	(11,869,688.22)
Amortization		(34,460,629.43)	(37,522,163.42)
Balance at the end of the year		308,895,834.85	353,668,028.23
Non Monetary Government Capital Grant			
Balance at the beginning		133,052.05	1,411,052.05
Grants received during the period			
Amortization		(133,052.05)	(1,278,000.00)
Balance at the end of the year		-	133,052.05
Ministry Capital Grant		13,156,751.40	13,156,751.40
		13,156,751.40	13,156,751.40
Capital Grant		322,052,586.25	366,957,831.68

Notes to the financial statements continued on page 25.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER 2021. (CONTINUED)

	2021 Rs.	2020 Rs.
(22) RESERVES		
General Reserve	272,721.64	272,721.64
Celltel donation	213,333.34	213,333.34
Research and consultancy fund	1,341,446.90	1,341,446.90
Foreign grant	3,464,295.25	3,464,295.25
Re - valuation surplus	26,682,504.54	26,682,504.54
	31,974,301.67	31,974,301.67
Research Pool		
Balance at the beginning	205,583.83	175,988.09
Receipts	-	29,683.00
Adjustments	(4,322.54)	(87.26)
Expenses		
	201,261.29	205,583.83
	32,175,562.96	32,179,885.50
Other Grants and Donations		
Balance at the beginning	23,066,377.26	23,375,926.37
Fixed assets received	-	-
Adjustments		
Amortization	(302,771.31)	(309,549.11)
	22,763,605.95	23,066,377.26
Revolving Fund		
Balance at the beginning	14,657,416.69	13,714,316.46
Receipts	429,251.12	149,922.65
Adjustments	-	(48,112.15)
Interest income	607,436.17	841,289.73
Expenses		
	15,694,103.98	14,657,416.69
Directors Fund		
Balance at the beginning	1,611,253.26	1,507,989.80
Interest Income	88,183.12	165,802.63
Adjustments	-	(62,539.17)
Expenses		
	1,699,436.38	1,611,253.26

Notes to the financial statements continued on page 26.

ARTHUR C CLARKE INSTITUTE FOR MODERN TECHNOLOGIES
NOTES TO THE FINANCIAL STATEMENTS - 31ST DECEMBER 2021. (CONTINUED)

	2021 Rs.	2020 Rs.
FINDS Grant		
Balance at the beginning	8,255,183.14	7,675,740.06
Interest income	426,167.76	579,443.08
Expenses		-
	8,681,350.90	8,255,183.14
NASDA Grant		
Balance at the beginning	7,217.24	7,251.87
Adjustments		
Interest income	215.28	265.37
Expenses	(300.00)	(300.00)
	7,132.52	7,217.24
	81,021,192.69	79,777,333.09
(23) ACCUMULATED SURPLUS / (DEFICIT)		
Opening balance -TG	(175,995,778.33)	(173,099,902.52)
Opening balance - P/C	51,749,362.54	46,501,908.50
Adjustments - TG	509,729.28	876,014.18
Adjustments - PC	265,219.03	(1,034,179.25)
Excess of income over expenditure	5,349,486.76	2,509,743.31
	(118,121,980.72)	(124,246,415.78)
TOTAL NET ASSETS / EQUITY	284,951,798.22	322,488,748.99

* Capital grant received has been amortized according to the Sri Lanka Accounting Standard No.20.
" Accounting for Government Grants and Disclosure of Government Assistance"

9. Summary of Short and Medium Term Activities Planned

- **Acquisition & Development of National Capacity in Basic Space Technologies**–

  - **Kitsune International Collaborative Nano Satellite Project**
    ACCIMT continued be a partner of the five-partite international collaborative project to design and develop a 6U nano satellite by Kyushu Institute of Technology (Kyutech). The design and development of Kitsune was completed by the end of 2021 and is scheduled to be launched and deployed to orbit from the International Space Station in 2022.

  - Furtherance of collaborative activities with foreign space faring nations for the acquisition of national capacity in Space Technologies, mainly in the area of development of a nano-satellites.
  - Engineering Model of cube satellite currently being developed will be extended to a flight model and launched to the ISS orbit. The main payloads are communication payloads.

- **Development of Aerospace Design and Manufacturing Capabilities in Sri Lanka –** Design and development of Fixed Wing UAVs (Unmanned Aerial Vehicles) and Quad-rotor/ Hexa-rotor Copter technologies with improved versions of stability, controllability and structures suitable for different applications.

  Design and development of Vertical Take-Off and Landing (VTOL) UAV and a multicopter incorporating a multispectral payload for rugged mapping work in agricultural applications an agricultural mapping and spraying UAV, are planned for 2022-2023.

- **Development of Mechatronics & Robotics Capabilities in Sri Lanka –** Develop customized mechatronics and robotics applications suitable for industry.

- **Remote Sensing & Geographic Information Systems (RS/ GIS) activities** - Projects and consultancies using Earth Observation (EO) satellite imagery and air borne platform (UAV) imagery in applications in the sectors, agriculture, plantation, environment, natural resource management etc. Some specifically identified projects and project areas for 2022-23 are “Forest cover type mapping”, monitoring of forest degradation, tea plantation mapping and monitoring, “Modeling of Electricity Distribution Network” and “Optimization of Rain Water Harvesting Area”.

- Electronics, Microelectronics & Communications Projects for development of industrial solutions and electronic products with high socio-economic impact.

- Continue the activities related to lightning protection at ACCIMT

- Continuing Professional Development (CPD) programmes in the fields of Electronics, Communications, robotics, Information Technology and Remote Sensing/ GIS.

- Training programmes to develop skills on troubleshooting and recovery of electronic and electrical equipment.

- Astronomy research projects and Astronomy popularization activities.

- Performance Testing/Certification, Calibration.

- Deep diagnostics and advanced hardware recovery of sophisticated electronic systems, measuring instruments and medical instrument. Recovery of faulty micro-processor based sub systems in the operating fleets of Locomotives and Power Coaches of Sri Lanka Railways is a specific planned activity.

- Human Resource capacity development in Aerospace Technologies, Space Technologies and Applications, Robotics and Bio-medical Engineering by way of specialized short term training, Post-graduate training, expert missions and other associated measures.

10. Auditor General Report 2021

My No: IMT/C/ACCIMT/FA/2021 26 July 2022

Chairman
Arthur C Clarke Institute for Modern Technologies

Report of the Auditor General on the Financial Statements and Other Legal and Regulatory Requirements of the Arthur C Clarke Institute for Modern Technologies for the year ended 31 December 2021 in terms of Section 12 of the National Audit Act No. 19 of 2018.

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1. Financial Statements

1.1 Opinion -

The audit of the financial statements of the Arthur C Clarke Institute for Modern Technologies for the year ended 31 December 2021 comprising the statement of financial position as at 31 December 2021, statement of financial performance, statement of change in equity, cash flow statement, and notes to the financial statements for the year then ended, including a summary of significant accounting policies, 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 provisions of the National Audit Act No. 19 of 2018 and Finance Act No. 38 of 1971. My report to Parliament in pursuance of provisions in Article 154 (6) of the Constitution will be tabled in due course.

In my opinion, the accompanying financial statements give a true and fair view of the financial position of the institute as at 31 December 2021, and of its financial performance and its cash flows for the year then ended in accordance with Sri Lanka Public Sector Accounting Standards.

1.2 Basis for Opinion -

I conducted my audit in accordance with Sri Lanka Auditing Standards (SLAuSs). My responsibilities, under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of my report. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

1.3 Other information included in the Annual Report 2021 of the Institute

The other information is defined as the information that are not included in my audit report but included in the Annual Report 2021 of the Institute, due to be forwarded to me after the date of this Audit Report. The management is responsible for this other information.

My opinion on Financial Statement does not reveal the other information and I will not give any sort of guarantee or opinion regarding this information.

My responsibility in relevant to auditing financial statements stands reading the other information whenever they are available and while doing so, consider whether there are material mismatches in the financial statements according to my knowledge obtained by auditing or any other way.

If I conclude material misstatements when reading Annual Report 2021 of the Institute, these matters should be communicated to governing parties for rectification. If further misstatement that are not rectified, these will be included in the report to be tabled in Parliament in due course by me, in accordance with Article 154 (6) of the Constitution of the Democratic Socialist Republic of Sri Lanka.

1.4 Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation of financial statements that give a true and fair view in accordance with Sri Lanka Public Sector Accounting Standards and for such internal control as management determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Institutes ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Institute or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Institute's financial reporting process.

As per Sub Section 16(1) of the National Audit Act No. 19 of 2018, the Institute is required to maintain proper books and records of all its income, expenditure, assets and liabilities, to enable annual and periodic financial statements to be prepared of the Institute.

1.5 Auditor's responsibility for the Audit of Financial Statements

My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Sri Lanka Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Sri Lanka Auditing Standards, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit 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.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the management.

- Conclude on the appropriateness of the management's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Institute's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. However, future events or conditions may cause the Institute to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with those charged with governance regarding, among other matters, significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

2. Report on Other Legal and Regulatory Requirements

2.1 National Audit Act, No. 19 of 2018 includes specific provisions for following requirements.

2.1.1 I have obtained all the information and explanation that required for the audit and as far as appears from my examination, proper accounting records have been kept by the Institute as per the requirement of section 12 (a) of the National Audit Act, No. 19 of 2018.

2.1.2 Financial statements presented is consistent with the preceding year as per the requirement of section 6 (1) (d) (iii) of the National Audit Act, No. 19 of 2018.

2.1.3 The financial statements presented include all the recommendations made by me in the previous year as per the requirement of section 6 (1) (d) (iv) of the National Audit Act, No. 19 of 2018.

2.2 Based on the procedures performed and evidence obtained were limited to matters that are material nothing has come to my attention;

2.2.1 to state that any member of the Institute has any direct or indirect interest in any contract entered into by the Institute which are out of the normal cause of business as per the requirement of section 12 (d) of the National Audit Act, No. 19 of 2018.

2.2.2 to state that the Institute has not complied with any applicable written law, general and special directions issued by the governing board of the Institute as per the requirement of section 12 (f) of the National Audit Act, No. 19 of 2018.

Reference to laws, rules, and regulations	Description
(a) Section 13.3 of the Chapter II of the Establishments Code of the Democratic Socialist Republic of Sri Lanka	Even though appointments to the posts should be made on acting basis as a temporary remedial action until permanent appointments are made and, if the service of full time officer is required, permanent appointments should be made without delay. However, appointments for 03 posts that had been made on acting basis in 2013 and 2015 should be filled immediately; the institute could not fill these vacancies even by 20 May 2022, the date of audit.

2.2.3 to state that the Institute has not performed according to its powers, functions and duties as per the requirement of section 12 (g) of the National Audit Act, No.19 of 2018.

2.2.4 to state that the resources of the Institute had not been procured and utilized economically, efficiently and effectively within the time frames and in compliance with the applicable laws as per the requirement of section 12 (h) of the National Audit Act, No. 19 of 2018.

3. Other matters

(a) Total receivable balances amounted to Rs. 2,290,168 that were carried forward for more than 02 years had not been recovered even at the end of the year under review.

(b) The institute had not taken actions to utilize the idle stock of goods amounted to Rs. 4,110,264 that had not been used for a period of more than 02 years, in the necessary functions of the institute or to sell or transfer the balance stocks to other institutions following a proper procedure by keeping the substantial stock necessary for research purposes.

(c) An Unmanned Arial Vehicle (UAV), which costs Rs. 10,564,677, was purchased in August 2016 to take aerial photographs for archeological research and excavations of the Department of Archeology. Before purchasing the vehicle, two officers of the institute had given training on operating this UAV. However, it is observed that UAV had not been utilized even by 25 May 2022, the date of auditing.

(d) The institute had signed an MOU with a Chinese Agency for the Establishment of National Hub for Receiving and Distribution of Earth Observation Data. The planned activities of the project had not been carried out and, therefore, the land with an extent of 12 acres in Thalagala area selected for this project had been underutilized since the year 2019 and this project which had been planned since the year 2013, had not been commenced even by the year 2022. Further, UDA had been selected to construct a fence around the land with an extent of 10 acres situated at Pitipana, Homagama, which was selected for the project at the beginning before obtaining this land without a proper feasibility study, deviating from the procurement procedure, and the total contract amount of Rs.3,543,744 had been paid to the relevant institute without a security bond, even though an advance could be given to them to commence the construction works of the fence. This land had been again transferred to the UDA, but the institute failed to get back the amount that had been paid for the construction of the fence.

(e) Even though there were 45 vacancies in the staff grade positions, 18 vacancies in non-staff grade positions, and 12 vacancies in other staff positions in the year under review, the relevant recruitments had not been made even by May 25, 2022, the date of auditing.

W.P.C. Wickramaratne
Auditor General

11. Answers to the Auditor General Report 2021

Answers to the Report of the Auditor General on the Financial Statements and Other Legal and Regulatory Requirements of the Arthur C Clarke Institute for Modern Technologies for the year ended 31 December 2021 in terms of Section 12 of the National Audit Act No. 19 of 2018.

2.2.2 Reference to laws, rules, regulations or special directions issued by the governing board of the Institute.

There are two posts vacated since 2013 that could not be filled up to date, namely Director (Space Technology and Applications), and Director (Information Technology). Acting appointments have been made since the year 2013, and attempts have been made to fill these vacancies on a permanent basis by calling for applications and publishing newspaper advertisements in the years 2016, 2017, 2019, 2020, and 2021. As applications that fulfilled the required qualifications had not been received, we could not make permanent appointments to these posts yet.

Since the officers appointed on an acting basis have not been paid an additional allowance, the institute is not incurring any additional costs.

Further, by the letter no. MSTR/4/1/R&PROVollii dated 01.06.2022 of the Ministry informed to temporarily suspend new recruitments and cover up the duties of these posts by the officers already in the service.

2.3 Other matters

(a) Invoice No. 5315, worth Rs. 23,000/- and issued to Upul Karunathilake as part of the audit quarry for the year 2019, was canceled on March 22, 2022, at the request of the relevant division. Four reminders were sent to recover the remaining invoices, and the relevant divisions were also notified.

Most of the invoices stated in the audit observation relevant to the period from 2009 to 2016 are to be recovered from government institutions like the Ministry of Science and Technology, Divineguma Department, Irrigation Department, etc.

Even though reminders were sent to them from time to time, favorable answers had not been received. Some projects like Divineguma are not functioning at present, and the attempts to recover these arrears have not succeeded.

However, the institute has further focused its attention on trying to recover these balances.

(b) Most of the items stated in the audit observation are electronic items related to research and development projects and necessity of these arises from time to time as per the nature of the

Projects. Due to the prevailing economic situation, such electronic items are not available in the open market for direct purchase. The total value of the stocks has become higher amount due to maintain a stock as per requirement of research and development. However, in the future actions will be taken to identify the stock items that have been idle for a long time as stated in the audit observation.

(c) By 2015, UAV technology was being used optimally in most countries in agriculture, town planning, surveying and mapping, archeology, and other fields. However, since Sri Lanka's UAV technology applications are at a minimal level, ACCIMT initiated introducing this technology for projects like remote sensing and geological information systems (RS/GIS). Accordingly, the technical staff of the institute carried out a feasibility study to see the ability to use such technology in several projects at selected government institutions that have the potential to use this naval UAV technology.

In the year 2016, the institute decided to purchase a UAV that is capable of obtaining images as a substitute for high-resolution satellite images at a higher cost for various projects implemented by government institutions using remote sensing data. The Q-200 AGRI PRO UAV, manufactured by Questuav Ltd. of the United States, was chosen during the relevant procurement procedure, and the manufacturer has recommended a flying height of 122 m (400 feet).

In importing this UAV, the institute has obtained proper approval for the technical use of this technology from the Ministry of Defense, the Sri Lanka Telecommunication Regulatory Commission, and Import and Export Control. The Ministry of Defense granted approval for the importation of UAVs with a maximum flying height of 250 meters (492 feet). Further, it was informed that permission should be obtained from the Civil Aviation Authority of Sri Lanka separately for each flying operation, informing the Office of the Chief of Defence Staff (OCDS) in each incident before flying the UAV.

Since August 2016, several requests have been made to the Civil Aviation Authority of Sri Lanka for permission to fly UAVs for the aforementioned purposes, and permission has been granted in all of these cases to fly the aerial vehicle at a maximum height of 60 m (200 feet) less than 122 m (400 feet). Any acceptable reason for granting approval for a maximum height of 60 m (200 feet) had not been informed to us, and this height of 60 m is not sufficient for the safe flying of a UAV, and the other countries that use UAV technology at the optimal level set this limit for general commercial operation at 122 m (400 feet). Therefore, due to limitations imposed by the Civil Aviation Authority of Sri Lanka on the flying height of UAVs, this could not be used for the expected objective.

The institute had a special discussion with the Civil Aviation Authority of Sri Lanka to discuss whether a technical assistant could be provided by the ACCIMT, the expertise institute in this field, for the effective utilization of UAV technology in Sri Lanka. In this meeting, it was also requested to resolve the problem of flying height. Even though this

matter was followed up in several instances, the Civil Aviation Authority has not responded favorably yet.

Since the Communication Division of the ACCIMT has succeeded in gaining skills in developing and opening UAVs as per the requirements of security forces, this UAV was handed over to this division in July 2020. The Institute expects to use this UAV for the projects of security forces and for training security personnel on flying UAVs. The institute is supposed to take action with the Civil Aviation Authority to resolve the above issue.

(d) In the year 2013, ACCMT submitted the proposal for Establishment of a National Hub for Receiving and Distribution of Earth Observation Satellite Data, to the National Planning Department. This proposal was submitted to the Department of External Resources for seeking the capacity for foreign funding from a foreign donor agency and as this attempt was not successful, the institute was instructed to seek the capacity to get the collaboration of a foreign party. Accordingly, the ACCIMT was able to enter into a collaboration with AIR-CAS China (former RADI). It was agreed a MOU

between two institutions that AIR-CAS provide technical equipment, installation and training for ACCIMY Engineers and ACCIMT to provide the land, construction of a building for the ground station, infrastructure facilities for the website and to provide technical operation of the ground station.

In year 2016 under the proposed Tech City Project implemented by the Ministry of Megapolis and Western Development lands were to be allocated to construct new facilities for institutions including Science and Technology institutes, Universities etc. and actions were being taken to acquire land identified on Pitipana, Homagama area. A ten acre land located in Mahenawatta was allocated to establish the ground satellite station. As the land was not properly demarcated, it was handed over to the Urban Development Authority, the coordinating institute to survey the land and construct a security fence around the land. As it is not practical to assign these jobs to other institute, the best decision is to assign the construction of fence to the UDA.

The ministry requested to provide another land to ACCIMT instead of it and to allocate the aforesaid land to the National Science Foundation for construction of the proposed National Science Center.

Later in year 2018, it was agreed to allocate 15 acres to this ground station from a land in Horagala, Padukka acquired to the state by the UDA and the earlier allocated land was again handed over to the UDA. Due to public protest arisen during the acquisition of this land in Horagala, again alloted a 12 acres land from the land called “Thalagalawatta” in Homagama,Thalagala to the satellite ground station.

Due to shifting of the land allocated for the construction of satellite ground station in several instances, a request has been forwarded in writing to the UDA to refund ACCIMT the amount paid to them for the construction of a security fence around the land.

During the initial discussions about obtaining satellite data for Sri Lanka, AIR-CAS agreed to provide access to their GF-1 grade data. Further, in seeking approval of the Cabinet for this project, a proposal is made for discussing with relevant Chinese partners how to obtain satellite data that will be useful to Sri Lanka from other civilian earth observation satellites of the Chinese government free of charge in addition to the earth observation satellite data that is expected to be provided by civilian earth observation satellites of GF-1 grade. Accordingly, a discussion was held using Zoom technology with the AIR-CAS in collaboration with the Sri Lankan Embassy in China.

As a result, in April 2022, AIR-CAS provided several data samples obtained from GF-1, GF-2, and GF-3 satellites covering Sri Lanka to ACCIMT for basic data analysis. The ACCIMT scientists have provided a report analyzing these data, and discussions are being held with the AIR-CAS in this regard.

(e) A newspaper advertisement was published on November 23, 2021, to fill the staff level vacancies. In response to this advertisement, applications that fulfilled the required qualifications only for the HM 1-3 category had been received, and the institute filled the posts of Senior Deputy Director (Administration and Human Resources), Senior Research Scientist, three Research Scientists, three Electronic Engineers, one Systems Engineer, two Software Engineers, and two Research Scientists.

Applications that fulfilled required qualifications for the posts of Deputy Director General (Admin. & Finance), Deputy Director General (Planning and Development), Director (Information Technology), Senior Electronic Engineers, Senior Systems Engineers and Engineers in AR 2 category had not been received.

As a result, on January 27, 2021, a paper advertisement was published calling for applications for the positions of Deputy Director General (Admin. & Finance), Deputy Director General (Planning and Development), Director (Information Technology), Senior Electronic Engineers, Senior Systems Engineers, and Engineers in the AR-2 category, but no applications with the required qualifications were received.

As per the paper advertisement published on November 23, 2020, for calling applications for the posts of Work Supervisor (MA 2-2), Book Keeper, and Engineering Assistant, we received applications that fulfilled the required qualifications, and necessary actions were being taken to fill these vacancies. However, interviews could not be held due to the COVID-19 pandemic, and recruitments could not be made for these posts due to the issuance of a Treasury Circular temporarily suspending new recruitments.

Further, letters were forwarded to the State Ministry of Skills Development, Vocational Education, Research, and Innovation on March 9 and 28, 2022, seeking approval for these recruitments.

A letter was forwarded to the State Ministry of Skills Development, Vocational Education, Research and Innovation on 18.03.2022 for recruiting to the posts of drivers and Karyala Karya Sahayaka from Multipurpose Development Task Force

Non staff grade posts and other staff vacancies are to be filled after filling all the staff grade vacancies.

It is observed that applications are not being receiving for the senior level posts of technical category due to lower salary sales approved by the government compared to salaries in the market at present.

Further, by the letter no. MSTR/4/1/R&PROVollii dated 01.06.2022 of the Ministry informed to temporarily suspend new recruitments and cover up the duties of these posts by the officers already in the service.

Sgd,
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