

# INFORMATION TECHNOLOGY AND DIGITAL SERVICES DEPARTMENT

POLICY NOTE 2023 - 2024

**DEMAND No. 31** 

### T. MANO THANGARAJ

Minister for Information Technology and Digital Services

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Government of Tamil Nadu 2023

### INFORMATION TECHNOLOGY AND DIGITAL SERVICES DEPARTMENT

#### **DEMAND No. 31**

#### **POLICY NOTE - 2023-2024**

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#### **CHAPTER-I**

#### INTRODUCTION

அஞ்சாமை ஈகை அறிவூக்கம் இந்நான்கும் எஞ்சாமை வேந்தற் கியல்பு.

(குறள் 382)

Courage, generosity, knowledge, motivation are the four essential elements of a successful leader.

Tamil Nadu is one of India's most progressive States and is amongst the top three States in the country on several economic and social indicators. The State has witnessed vibrant growth in all sectors and the growth of IT industry is phenomenal. The State has a well-developed IT-infrastructure, a large reservoir of talent that has earned it the reputation of "Intellectual Powerhouse" within the country.

The Covid 19 crisis and the lockdown situation has had a positive impact on the IT Industry. The use of Social Media, Video Conferencing applications and Cloud services have seen a rapid growth as people and businesses started using these digital tools and technologies at a greater extent and as a result, the demand for the use of the internet and broadband speed expanded dramatically. This necessitated the IT businesses to undergo transformation by shedding the conventional bringing in Work-from-Home methods and culture, thus created numerous career opportunities.

The emergence of new technologies like Artificial Intelligence (AI), Machine Learning (ML), Augmented Reality (AR) and Virtual Reality (VR) etc. in the Ed-Tech platform opened a whole new world of learning for the student community. e-Commerce and other online

businesses witnessed fantastic growth which had never been witnessed before.

**Government's** commitment The promote investment in IT and ITeS Sector has been instrumental for the spurt in investments by the Private Sector by making it a major contributor for the economy of the State. Recognizing the potential of IT sector in accelerating the economic development of the State, the Government has multiplied its efforts to create a business environment that is conducive for rapid IT development. This made the State as the preferred destination for investments to all Multi National IT & ITeS companies. Several world-renowned institutions have set up their operations in the State.

The establishment of State-of-the-art Tamil Nadu State Data Centre (TNSDC), Disaster Recovery Centre (TNDRC), a Cloud Platform and a Server Farm in the State serve as the

backbone of IT-infrastructure for the Government Departments' e-Governance Initiatives. A Data Centre Policy has been launched to increase the Private players to establish Data Centres in the State.

To improve the startup ecosystem in the State, Tamil Nadu Technology Hub (iTNT) **Hub)** has been setup to address the gap in Deep and Emerging Technologies needed for the businesses growth. To propel the mission of leveraging technology to deliver economic growth while balancing the social governance and environmental goals in partnership with the industry, "Umagine Chennai - 2023" event conducted to bring together all the stakeholders in the ecosystem in ensuring adoption of technologies by various Government Departments in order to provide citizens easy access to technology for betterment of life and livelihoods. The event was a grand success.

The details of the event are as follows: -

- i. No. of Sessions 119
- ii. No. of speakers 324
- iii. No. of country Partners 15
- iv. No. of Registered Participants -19,239

A "Server Farm" has been created at TNSDC with necessary hardware, software and testing tools which allows all Government Departments to comply with Vulnerability Assessment and Penetration Tests (VAPT) before hosting their applications. To make the State cyber resilient, a Cyber Security Architecture (CSA-TN) is operational at TNSDC which swiftly resolves the vulnerabilities reported in Government Websites, Portals and Apps.

The presence of IT-Special Economic Zones (ELCOSEZ) in Chennai and other Tier-II

cities are now home to several leading IT & ITeS companies creating job opportunities and plays a vital role in software exports from the State, which touched a record of Rs.2 lakh crore with a Compound Annual Growth Rate (CAGR) of 16.4% during the year 2022-23 and has generated direct employment for approximately 3,50,000 individuals.

The e-Governance initiatives, such as e-District, Arasu e-Sevai Centres help the Government in providing Citizen Centric Services in efficient, convenient and transparent manner. A Centre of Excellence in Emerging Technologies (CEET) has been set up in the State to provide technical expertise in implementing various initiatives of Departments.

In Governance, data plays an important role in decision making. Purity of data is essential in implementing welfare schemes to identify beneficiaries. Information Technology and Digital Services Department has played a pivotal role by implementing Data-driven Governance techniques through a separate Data Policy for the State and Data Purity initiatives. This has impacted in saving several crores of funds earmarked for welfare schemes. A State Family Database (SFDB) and a Blockchain Backbone is being created to provide paperless, contactless and transparent services to citizens in a proactive manner. An e-Office application is operational at the Secretariat for paperless and speedy disposal of files to improve governance.

To ensure better telecom connectivity and 5G penetration, by easing the processes of Right of Way (RoW) permissions, a Telecom Infrastructure Policy has been launched in the State.

Network Connectivity is a major element in e-Governance. The Tamil Nadu State Wide Area Network (TNSWAN) integrated with 1 Gbps National Knowledge Network (NKN) bandwidth is connecting more than 20,000 Government Offices in the State to provide voice, data, Internet and audio-visual links. The BharatNet project implementation envisages availability of high speed internet connectivity through Optical Fibre Cables in all 12,525 Village Panchayats in the State. An offshoot of the project, "TamilNet" is to be implemented to connect all urban areas in the State. TNSWAN, BharatNet and TamilNet would be integrated to form a Unified Digital Infrastructure which would transform the State to go fully digital.

The Information Technology and Digital Services Department with support from other Stakeholders and Partners in the sector, strives to provide the necessary fillip to all Government Departments and Agencies, to bring out a transformation in e-Governance and better service delivery.

#### **CHAPTER-II**

### ELECTRONICS CORPORATION OF TAMIL NADU LIMITED (ELCOT)

#### 1. Introduction

Electronics Corporation of Tamil Nadu Limited (ELCOT) is a Company registered under Companies Act, 1956 and a wholly owned Public Sector Undertaking of the Government of Tamil Nadu established on 21.03.1977.

ELCOT is the Nodal Agency for development of Electronics and Communications, IT/ITeS Products / Services and IT Infrastructure and Promotions for the Government of Tamil Nadu.

With a grand vision to make Tamil Nadu a premier IT destination in India, ELCOT excels in four broad areas, namely, IT promotion for the State of Tamil Nadu, IT procurement for Government of Tamil Nadu, Development of

Electronics Sector within Tamil Nadu and Catering of services related to Data Centre for Government Departments.

#### 2. IT Promotion and Development

ELCOT has been playing a vital role to make the State as destination of choice for Information Technology (IT) and Information Technology Enabled Services (ITeS) companies. The growth strategy of ELCOT is built around the main objectives of Creation of IT Parks with World Class IT Infrastructure, Creation of Employment Opportunities through Generation of Additional Economic Activities, IT Investment Promotion and Skill Development.

ELCOT has played a pioneer role in the creation of 8 IT Special Economic Zones (SEZs) in Chennai and in Tier-II Cities of the State viz., Coimbatore, Madurai (2 sites), Tiruchirappalli, Salem, Tirunelveli and Hosur in a total extent of 1288.2 acres of land (1231.65 acres in SEZ and

56.55 acres in non-SEZ space) at an investment of Rs.844.57 crore.

To promote Tamil Nadu as a preferred destination of choice for IT and ITeS investments, ELCOT has participated in the following events:

- The "Rise Emerge London Summit" held from 05<sup>th</sup> to 07<sup>th</sup> May 2022 at UK.
- "NASSCOM The NEXT Summit" held on June 7, 2022 at Chennai.
- "Infocomm India 2022" held from 5<sup>th</sup> to 7<sup>th</sup> September, 2022.
- "India Mobile Congress" held from 1<sup>st</sup> to 4<sup>th</sup> October, 2022 at New Delhi.
- "GITEX GLOBAL 2022" event held at Dubai, United Arab Emirates at the Dubai World Trade Centre from 10<sup>th</sup> to 14<sup>th</sup> October 2022.
- "Bangalore Tech Summit 2022" held from 16<sup>th</sup> to 18<sup>th</sup> November 2022 at

the Bangalore Palace, Bangalore, Karnataka.

- "SLUSH 2022" held from 17<sup>th</sup> to 18<sup>th</sup>
   November 2022 at Helsinki, Finland.
- "TN Web3" Build Ahead event held on 25<sup>th</sup> November 2022 at Chennai.
- "UMAGINE 2023" the first edition of global technology & innovation summit held in Chennai Trade Centre during 23<sup>rd</sup> to 25<sup>th</sup> March, 2023 in partnership with CII.

ELCOT is also the Certification Authority under the ICT Policy 2018 for availing additional Floor Space Index (FSI) for IT Parks and Nodal Agency for Tamil Nadu Data Centre Policy.

## 2.1 ELCOT Special Economic Zones (ELCOSEZs)

#### 2.1.1 ELCOSEZ- Sholinganallur, Chennai

ELCOT has established an ELCOSEZ in an extent of 377.08 acres at an investment of

Rs.258.56 crore at Sholinganallur, Chennai and created necessary common infrastructure and an administrative building.

Land has been leased to the following companies in this ELCOSEZ:

S. No.	Company	Land (in acres)
1.	Wipro Ltd.	80
2.	HCL Technologies Pvt. Ltd.	50
3.	Tech Mahindra Pvt. Ltd.	50
4.	Ford Motors Pvt. Ltd.	28
5.	Cognizant Technologies Solution Pvt. Ltd.	20
6.	Sutherland Global Services Ltd.	15
7.	Tamil Nadu Electricity Board	16

These companies have established facilities at a built-up space of 109.31 lakh sq.ft and employment is created for 68,516 individuals. The above private companies are in the business of Software Development, Maintenance and Testing, Consulting and Business Process Outsourcing.

#### **Upcoming Information Technology Tower:**

To meet the growing demand of quality IT space for export oriented MSMEs and other IT/ITeS companies in Chennai, the construction of 2.33 lakh sq. ft Information Technology Tower at an estimated cost of Rs.88.21 crore is under progress at Sholinganallur, which is to be inaugurated in May 2023.

#### 2.1.2 ELCOSEZ Vilankurichi, Coimbatore

ELCOT has established an ELCOSEZ in an extent of 61.59 acres of land at an investment of Rs.217.46 crore at Vilankurichi, Coimbatore

District and created necessary common infrastructure and an administrative building.

Land has been leased to the following companies in this ELCOSEZ:

S.No.	Company	Land (in acres)
1	WIPRO Ltd.	9.5
2	Tidel Park Coimbatore Ltd.	9.5

These Companies have created necessary infrastructure by constructing 23 lakh sq. ft. IT building and providing employment for approximately 16,809 individuals.

#### **Upcoming Information Technology Tower:**

To meet the growing demand of quality IT space for IT/ITeS companies in Coimbatore, the construction of 2.66 lakh sq.ft. Information

Technology Tower at an estimated cost of Rs.114.16 crore is under progress at ELCOSEZ-Vilankurichi, Coimbatore which is to be inaugurated in May 2023.

#### 2.1.3 ELCOSEZ - Ilandhaikulam, Madurai

ELCOT has established an ELCOSEZ in an extent of 28.91 acres of land at an investment of Rs.34 crore at Ilandhaikulam, Madurai District and created necessary common infrastructure and constructed an Administrative-cum-IT building measuring 60,652 sq.ft.

Land has been leased to the following companies in this ELCOSEZ:

S.No.	Co	ompany	Land (in acres)
1	Honeywell Ltd.	Technologies	11.25

2	HCL Technologies Ltd.	6.75
3	Chella Software Pvt. Ltd.	2.25
4	Tamil Nadu Electric Board	ity 0.58

In addition, 6650 sq. ft. land has been leased to Rebar Design & Detail Pvt. Ltd.

The above private companies have created necessary infrastructure by constructing 7.22 lakh sq. ft. IT space in this ELCOSEZ.

In the Administrative-cum-IT building, space has been allotted to the following companies:

S. No.	Company	Space (in sq. ft.)
1.	Galaxy Infotech	2,508

2.	Rebar Design & Detail Pvt. Ltd.	3,724.12
3.	SBL Knowledge Services Ltd.	15,181
4.	Neeyamo Enterprises Solutions Pvt. Ltd.	30,103
5.	Profizio IT Solutions Pvt. Ltd.	9,136

These companies are into consulting, application development, business process outsourcing and digitization of data and are providing employment to approximately 8,040 employees.

#### 2.1.4 ELCOSEZ - Vadapalanji, Madurai

ELCOT has established an ELCOSEZ in 245.17 acres of land (213 acres in SEZ and 32.17 acres in non-SEZ space) at an investment of Rs.70 crore at Vadapalanji, Madurai District and created necessary common infrastructure

including road over bridge. ELCOT has also constructed an Administrative-cum-IT building measuring 70,139 sq.ft.

Land has been leased to the following companies in this ELCOSEZ:

S.No.	Company	Land (in acres)
1	HCL Technologies Ltd.	60
2	Chain-sys Software Exports Pvt. Ltd.	20
3	Pinnacle Infotech Solutions Pvt. Ltd.	34.09
4	Jobin and Jismi IT Services LLP.	4
5	Sashma Global Pvt. Ltd.	1.5
6	Optisol Business Solutions Pvt. Ltd.	8.25
7	Global Associates	4

8	Osiz Technologies Pvt. Ltd.	3.53
9	Access Healthcare Services Pvt. Ltd.	4.01
10	Cloud Vantage Solutions Pvt. Ltd.	3.16
11	Dew Info-Systems Pvt. Ltd.	10.19

In this IT Building, 64,980 sq.ft. of space has been allotted to the following companies:

S. No.	Company	Space (in sq. ft.)
1	Neeyamo Enterprise Solutions Pvt. Ltd.	46,968
2	Neeyamo Works Technologies Pvt. Ltd.	11,543
3	Chain-sys Software Exports Pvt. Ltd.	6,469

These companies are into consulting, payroll processing and digitization of data and are functional with 1077 employees.

#### 2.1.5 ELCOSEZ - Navalpattu, Tiruchirappalli

ELCOT has established an ELCOSEZ in 147.61 acres with SEZ area of 123.23 acres of land at an investment of Rs.80.55 crore at Navalpattu, Tiruchirappalli District and created necessary common infrastructure and constructed an Administrative-cum-IT building measuring 59,960 sq.ft.

Land has been leased to the following companies in this ELCOSEZ:

S.No.	Company	Land (in acres)
1	iLink Multitech Solutions Pvt. Ltd.	2

2	Esskay Design and Structures Pvt. Ltd.	3
3	Earmarked to TNEB	0.6

In this Administrative-cum-IT building, 59,960 sq. ft. space is allotted to the following companies:

S.No.	Company	Space (in sq. ft.)
1.	iLink Multitech Solutions Pvt. Ltd.	6,668
2.	Scientific Publishing Services	30,250
3.	Vuram Technology Solutions Pvt. Ltd.	5,976
4.	Vdart Technologies	3,643
5.	Disaster Recovery Centre	5,963

6.	GI Tech Gaming Co. India Pvt. Ltd.	4,919
7.	VR Della IT Services Pvt. Ltd.	2,541

These companies are into e-publishing, software development, business process management services and solutions and gaming software development and are functioning with 1,482 employees.

# **Upcoming Information Technology Tower:**

To meet the growing demand of quality IT space for IT/ITeS companies at Tiruchirappalli, the construction of 1.16 lakh sq.ft. Information Technology Tower at an estimated cost of Rs.48.10 crore is completed and to be inaugurated soon.

#### 2.1.6 ELCOSEZ- Gangaikondan, Tirunelveli

ELCOT has established an ELCOSEZ in 200 acres of land at an investment of Rs.55 crore at Gangaikondan, Tirunelveli District and created necessary common infrastructure and constructed an Administrative-cum-IT building measuring 57,107 sq. ft. A total space of 9464 sq.ft has been allotted to the following Companies and are operating with a strength of 110 employees:

SI. No.	Company	Space (in Sq.ft.)
1	Caliber Interconnect Solutions Pvt. Ltd.	5,994
2	Novigo Partners Pvt. Ltd.	3,470

Land has been leased to the following companies in this ELCOSEZ:

S.No.	Company	Land (in acres)
1	Syntel International Pvt. Ltd.	100
2	Fishin India Pvt. Ltd.	33.57
3	Ranger Technologies Pvt. Ltd.	1

In this ELCOSEZ, 100 acres of land has been leased to Syntel International Pvt. Ltd. and they constructed 2.60 lakh sq. ft. IT building and is operating with 152 employees.

# 2.1.7 ELCOSEZ- Jagirammapalayam, Salem

ELCOT has established an ELCOSEZ in 53.33 acres of land at an investment of Rs.44 crore at Jagirammapalayam, Salem District and created necessary common infrastructure and constructed an Administrative-cum-IT building measuring 62,174 sq. ft.

Land has been leased to the following companies in this ELCOSEZ:

S.No.	Company	Land (in acres)	
1	Mahima Technologies Pvt. Ltd.	5.501	
2	Vee Technologies Pvt. 9.49 Ltd.		
3	TANTRANSCO Ltd.	7.88	
4	E-Mudhra Ltd.	2.5	
5	Anmol Technologies Pvt. Ltd.	S	
6	FocusR Consultancy and Technologies Pvt. Ltd.	1	
7	Nuratech Consultancy Services Pvt. Ltd.	6.877	

In the Administrative-cum-IT building, 55,060 sq.ft. space is allotted to the following companies:

S.No.	Company	Space (in sq. ft.)
1	E-Mudhra Ltd.	2,989
2	Reveille Technologies Pvt. Ltd.	3,704
3	Nuratech Consultancy Services Pvt. Ltd.	3,704
4	Dilogy Solutions Pvt Ltd.	1,000
5	Knowledge Lens Pvt. Ltd.	1,000
6	StinSoft Technologies Pvt. Ltd.	989
7	Vee Technologies Pvt. Ltd.	21,124
8	Vee Imaging Solutions Pvt. Ltd	10,562
9	Mahima Technology Pvt. Ltd.	3,448
10	Zealous Services	6,540

These companies are operating with approximately 787 employees.

### 2.1.8 ELCOSEZ-Viswanathapuram, Hosur

ELCOT has established an ELCOSEZ in 174.47 acres of land at an investment of Rs.85 crore at Viswanathapuram, Hosur, Krishnagiri District and created necessary common infrastructure and constructed an Administrative-cum-IT Building measuring 62,100 sq.ft.

In this ELCOSEZ, 12 acres of land has been earmarked to TNEB.

In the Administrative-cum-IT Building, 34,639 sq.ft. space has been allotted to the following companies:

S. No.	Company	Space (in sq. ft.)
1	US Technology	21,100

	International Pvt. Ltd.	
2	Chandu Soft Technologies Pvt. Ltd	10,550
3	Thendral Infotech	2,989

These companies are operating with approximately 100 employees.

In addition, ELCOT has leased land to the following companies in this ELCOSEZ.

S.No.	Company	Land (in acres)
1	IAMPL	12.04
2	Dilogy Solutions LLP	8.93

#### 2.2 Multi Sector Special Economic Zones

Government, vide G.O.(Ms) No.787, Revenue & Disaster Management Department, Land Disposal Wing, LD5 (1) Section, dated 22.11.2021, issued orders that, all lands alienated to ELCOT for the purpose of IT Parks, can be used as Multi Sector SEZs. Now, ELCOT is working to attract the companies from all sectors to setup their units at ELCOSEZs.

#### 3. IT-Infrastructure

ELCOT has been maintaining the State IT infrastructure services since 2007, which serves as a backbone for providing e-Governance services to the citizens and connectivity to the Government Departments.

#### 3.1 Connectivity Services

# 3.1.1 Tamil Nadu State Wide Area Network (TNSWAN)

TNSWAN commenced its operations in the year 2007, under the National e-Governance Plan (NeGP) jointly by the Union and State Governments.

TNSWAN started its operations with 708 Points of Presence (PoPs) which have now been increased to 829 PoPs. 3000+ offices of various Departments of the Government of Tamil Nadu are connected with TNSWAN to access their applications, services and servers hosted in TNSDC in a secured manner.

To enable effective workflow in delivery of services to the citizens, TNSWAN provides voice, data and video connectivity to all Government Departments.

From the year 2015, as per the guidelines of Ministry of Electronics and Information Technology (MeitY), Government of India, National Knowledge Network (NKN) has been integrated with TNSWAN at District PoPs for enhancing the Bandwidth at the District PoPs.

#### 3.1.2 TNSWAN Phase-2 Extension

Government of Tamil Nadu has accorded approval to extend TNSWAN Phase-2 operations for the period upto 13<sup>th</sup> February 2023 and ELCOT has submitted request for further extension of the existing TNSWAN services.

### 3.2 Other Connectivity Services

### i) MPLS VPN Connectivity

Multi-Protocol Label Switching Virtual Private Network (MPLS VPN) is being provided as a redundant connection to TNSWAN. ELCOT provides MPLS VPN connectivity services to around 88 offices of various Government Departments.

### ii) Internet Leased Line Connectivity

Internet Leased Line connectivity is being provided to 281 Government offices on a dedicated basis.

#### iii) VPNoBB Connectivity

Virtual Private Network over Broadband (VPNoBB) is a cost effective alternative for providing Intranet access at lower bandwidth. ELCOT provides VPNoBB connectivity to 290 Government offices.

#### 3.3 Tamil Nadu State Data Centre (TNSDC)

# 3.3.1 Tamil Nadu State Data Centre-I (TNSDC-I)

The Government of Tamil Nadu implemented the first ISO certified State Data Centre (TNSDC-I) in the country in 2011. It was operationalized with a capacity of about 62 racks at a budget of Rs.138 crore for a period of 12 years. More than 318 applications / services are currently hosted in TNSDC-I, TNSDC-II and Cloud environment.

# 3.3.2 Tamil Nadu State Data Centre-II (TNSDC-II)

TNSDC-II, the second phase of TNSDC was established at a budget of Rs.74.7 crore and commenced its operations on 07.09.2020 with 35 Rack space initially. The Data Centre can accommodate 138 racks and its modular design supports seamless scale up.

As on date, 56 racks are commissioned and it reached almost 100% utilisation. The Data Centre will be further expanded with additional 56 rack space. Around 50 applications of Tamil Nadu Government Departments are hosted at TNSDC-II.

# 3.4 Tamil Nadu Disaster Recovery Centre (TNDRC)

ELCOT has established Tamil Nadu State
Data Centre (TNSDC) which enables the
Government Departments to host their
applications/services on a common, redundant,

secured and controlled environment. However, risks pertaining to natural disasters pose a herculean challenge and therefore establishment of a Disaster Recovery Center (DRC) becomes mandatory to ensure business continuity, given the criticality of various e-Governance applications hosted at the State Data Centre.

The Tamil Nadu Disaster Recovery Centre (TNDRC) was established at ELCOSEZ, Tiruchirappalli and has been operational from the year 2018. This provides business continuity for various critical e-Governance applications hosted in TNSDC in the event of any breakdown or disaster.

# 3.5 Thamizh Megam-TN Cloud Computing Services

The State Cloud Infrastructure, trademarked as 'Thamizh Megam', enables optimal sharing of system resources with minimal management. It is operational from the

year 2016 at a cost of Rs.14.40 crore and currently in the 7<sup>th</sup> year of Operations and Maintenance. At Thamizh Megam, Infrastructure-as-a Service (IaaS) and Platform-as-a-Service (PaaS) are being offered and around 180 applications/services are hosted.

The Cloud Infrastructure is enhanced and the Disaster Recovery facility has been extended at a budget of Rs.9.98 crore.

### 3.6 e-Security

A high level Security Architecture Framework – Security Architecture for TNSDC, to ensure data protection of Government applications/services, has been implemented with High-End Router, Next-Generation Firewall, Distributed Denial of Services (DDOS), Web Application Firewall (WAF), Intrusion Prevention System (IPS), Intrusion Detection System (IDS),

Virtual Private Network (VPN) Concentrator, Modular Core Switch and Security Information and Event Management (SIEM). Vulnerability Assessment and Penetration Testing (VAPT) is conducted periodically on the hosted applications/services through CERT-IN empaneled agencies to ensure security of applications/services.

# 3.7 Cyber Security Architecture for Tamil Nadu (CSA-TN)

In order to counter Cyber Threats and Cyber-Attacks, ELCOT entered into an MoU with Centre for Development of Advanced Computing (C-DAC), Chennai, for establishing Cyber Security Architecture for Tamil Nadu(CSA-TN). State Government sanctioned a total cost of Rs.21.39 crore. Through CSA-TN, the three pillars of Information Security Management System

(ISMS), namely, People, Process and Technology are strengthened as below: -

### **People**

- a. Departments are assigned with a Chief Information Security Officer (CISO) / Information Security Officer (ISO) for the Department employees to reach out to in case of any cyber related issues/threats. Periodically, CISO/ISO are given training on Cyber Security awareness.
- b. Classroom-based and virtual training are conducted across Tamil Nadu to educate the Department Officials on how to secure their Cyber Assets and report incidents.
- c. Cyber Security Incident Response Team
   (CSIRT) A trained pool of experts on
   Cyber Security is made available for prompt response and recovery in case of any cyber incident.

#### **Process**

- a. National Institute of Standards Technology (NIST) - The NIST Cyber Security Framework is a powerful tool to organize and improve the cyber security program. It is a set of guidelines and best practices to help organisations build and improve their cyber security posture with main functions, namely, identify, protect, detect, respond and recover. CSA-TN is one of the pioneers in implementing NIST quidelines State-wide Cyber Security Program.
- b. The release of a strong Cyber Security
  Policy to streamline the process of
  identifying and protecting resources
  against threats.
- c. A Helpdesk Team of CSA-TN supports
   Departments with rescue activities in case
   of defacing/ hacking/ breaching using

- quicker and reliable channels to detect, respond to and recover from cyber incidents.
- d. The Cyber Crisis Management Plan (CCMP) for Cyber Resilience defines how the organisation plans to respond to a cyber incident, can work the difference between success and failure of a Cyber Security Program. The speed at which the Crisis Management Group (CMG) and Crisis Management Cell (CMC) identify and mitigate such incidents makes a significant difference in controlling their risks, costs and exposure. A comprehensive CCMP document is being charted out.
- e. Regular auditing of the Systems / Workstations of the entire State is planned and execution is already underway.

### **Technology**

- a. Complete Security Operation Centre (SOC) Team and Cyber Security Incident Response Team (CSIRT) have been established as part of CSA-TN to monitor the critical assets.
- b. Security Information and Event Management (SIEM) solution is established as part of SOC-TN to prevent attacks on critical assets. As on date, around 5000+ Brute Force credential access events were detected. Around 60+ Endpoint Denial of Service (DoS) activities were detected. Around 4500+ Lateral Entry Movement incidents were detected.
- c. Antivirus installation To detect and prevent any cyber-attack at Secretariat, around 2,533 machines were identified and completely scanned. Antivirus (AV)

software was installed in around 813+ machines.

#### 4. e-GOVERNANCE

#### 4.1 Permanent Enrolment Centres (PECs)

ELCOT is one of the agencies empanelled by the Unique Identification Authority of India (UIDAI) to execute Aadhaar Enrolment activities in the State. ELCOT has established 237 PECs at locations such 33 various District as Collectorates, 18 Municipal Corporation Headquarters, 42 Municipal Zonal offices, 114 Municipalities, 8 Town Panchayats, 2 Revenue Divisional Offices, 15 Block Development Offices, 4 Village Panchayats and 1 Provident Fund Office.

The Transaction count done at all Permanent Enrolment Centres (PECs) as on 31.01.2023 is 87,89,309 Nos.

SI. No.	Financial Year	Aadhaar Enrolment	Demographic update	Total transaction Count
1	Oct'2016	5,40,741	17,764	5,58,505
	Mar′2017			
2	Apr'2017	6,71,052	9,43,269	16,14,321
	Mar'2018			
3	Apr'2018	3,63,500	13,22,042	16,85,542
	Mar'2019			
4	Apr'2019	2,64,333	10,92,930	13,57,263
	Mar′2020			
5	Apr'2020	1,30,963	9,36,257	10,67,220
	Mar'2021			
6	Apr'2021	2,56,765	10,97,249	13,54,014
	Mar'2022			
7	Apr'2022	2,27,129	9,25,315	11,52,444
	Jan'2023			
	Total	24,54,483	63,34,826	87,89,309

# 4.2 Permanent Enrolment Centres (PECs) in Educational Blocks under Samagra Shiksha

ELCOT has been selected as an Enrolment Agency by School Education Department Samagra Shiksha to establish Aadhaar Enrolment Centre in 505 centres at all 385 Educational Blocks for providing Aadhaar related services to school students. At the initial stage, 120 Aadhaar service centres have been established in 120 Educational Blocks from 03.01.2022.

The Transaction count done at all Samagra Shiksha PECs as on 31.01.2023 is 4,39,780.

SI. No.	Financial Year	Aadhaar Enrolm ent	Demogra phic update	Total transact tion Count
1.	Jan'2022	16,604	57,048	73,652
	Mar'2022			
2.	April'2022	68,242	2,97,886	3,66,128

Total	84,846	3,54,934	4,39,780
- Jan <b>'2023</b>			

#### 5. PROCUREMENT

ELCOT is the Optional Procurement Agency for the procurement of IT hardware for Government Departments / Corporations / Autonomous bodies as per G.O. (Ms). No. 58, Finance (BPE) Department, dated 16.02.1999. ELCOT provides procurement services in IT hardware viz. servers, desktop computers, laptop computers, printers, scanners, UPS and cost-effective solution others as а Government and Government Agencies. The original equipment manufacturers and suppliers of desktop, laptop, printer and multifunction devices have been responsive to ELCOT's tenders and offer competitive prices in view of the large volumes.

ELCOT serves the hardware needs of the Departments by two modes of procurement.

- Rate Contract procurement where ELCOT enters in to Rate Contract Tender with leading suppliers of IT Hardware for supply of items on demand from Government Departments at a fixed price throughout the year.
- Full Procurement tenders where ELCOT undertakes a separate tender process for the requirements of a Department.

By grouping the items that are commonly procured by the Departments under the Rate Contract, ELCOT ensures better prices and availability of the products throughout the year. ELCOT has an "e-Procurement Portal" through which the Departments can generate Proforma Invoice for price information of the products available, update the information on transfer of amount and request for placing purchase orders.

This portal has quickened and streamlined the transactions of the Government Departments with ELCOT and increased transparency. ELCOT expects to procure IT Hardware for a value of Rs.300 crore for the year 2022-23 and expects procurement of Rs.400 crore for the year 2023-24.

ELCOT is undertaking digitization works according to the requirements of Government Departments using various types of scanners for Old Records / Books / Documents / Manuscripts / Palm Leaves.

ELCOT arranges Video Conferencing equipments to various Government Departments for the inauguration of welfare schemes and meetings. ELCOT provides CCTV (Closed Circuit Television) Surveillance System with accessories for monitoring examinations conducted by various Government Departments/Agencies and

has supported organizations such as TNPSC in conducting various examinations.

ELCOT maintains Secretariat Network (SECNET) and Surveillance System at Main Building and Namakkal Kavignar Maaligai, Secretariat on 24x7 basis. ELCOT also implements the scheme of the Laptops / Tablets to All India Service Officers and also maintains the portal.

#### **CHAPTER-III**

### DIRECTORATE OF e-GOVERNANCE AND TAMIL NADU e-GOVERNANCE AGENCY (TNeGA)

#### 1. Introduction

Information Technology is а transformatory tool for making Governance simple, transparent and citizen focused. To achieve this objective, the Directorate of **e-Governance** was established during the year 2006. An agile and focused approach in operations was also needed in this sector. Hence, the Tamil Nadu e-Governance Agency (TNeGA) was created during the year 2007 as a society registered under the Tamil Societies Registration Act, 1975, to improve the quality of life of the Citizens through efficient delivery of Government Services using ICT tools and to create cost effective, scalable

solutions for Governance by making full use of Emerging Technologies.

The Director of e-Governance functions as the ex-officio Chief Executive Officer of TNeGA.

#### 2. Organisational Structure

# 2.1 Directorate of e-Governance and Tamil Nadu e-Governance Agency:

The Government, vide G.O.(Ms).No.10, Information Technology and Digital Services (B1) Department, dated: 10.03.2023, have ordered for restructuring of the Directorate of e-Governance and Tamil Nadu e-Governance Agency. Both Directorate of e-Governance and TNeGA are led by a team of Government officers on deputation along with Senior Technical experts from the IT industry.

For Directorate of e-Governance, 61 Technical posts and 16 non-technical posts have been sanctioned and for TNeGA 188 technical posts and 13 non-technical posts have been sanctioned after restructuring. All these posts have been sanctioned till 31.12.2026.

### 2.2 District e-Governance Societies (DeGS)

The e-district project is one of the State Mission Mode Projects (SMMPs) being implemented under National e-Governance Plan (NeGP). The objectives of the project is electronic delivery of identified high volume Citizen-Centric services at District levels. Hence the Government have ordered for the formation of District e-Governance Societies to implement the project. This Society is headed by the District Collector in all Districts, except Chennai. As far as Chennai is concerned, the DeGS is headed by the Commissioner, Greater Chennai Corporation. DeGS gets a 5% revenue share

from the e-Sevai operations, which has now been enhanced to 10% with effect from 01.03.2023.

#### 3. Digital Tamil Nadu (DiTN)

The mission of the Digital Tamil Nadu (DiTN) is to enable all Government Departments in Tamil Nadu to transform their services and functions through digital mode. This will make a path for transparent service and Citizen-Centric Governance to citizens.

## 3.1 Delivery of G2C Services

#### A. e-Sevai Centres

G2C Services are provided electronically through Common Service Centres to deliver services near the door steps of citizens. The e-Sevai centres are run by Tamil Nadu Arasu Cable TV Corporation Ltd. (TACTV), TACTV

Franchisee, Primary Agricultural Co-operative Credit Societies (PACCS), Tamil Nadu Corporation for Development of Women (TNCDW), Fisheries and Fishermen Welfare Department, Village Level Entrepreneurs (VLEs), Members of Legislative Assembly Office and Cantonment Board to deliver Government services to the public near their home.

As on 17.03.2023, Tamil Nadu e-Governance Agency have issued **9720** e-Sevai user IDs and have established **9455** e-Sevai Centers across the State through different Service Centre Agencies.

Table 1: List of agencies that run e-Sevai centers (as on 20.03.2023)

S.	Agency	e-Sevai	e-Sevai
No.		Centers	Counters
1	TNCDW(Tamil Nadu Corporation for	1,987	2,004

	Development of Women)		
2	PACCS (Primary Agricultural Cooperative Credit Societies)	3,406	3,412
3	TACTV (Tamil Nadu Arasu Cable TV Corporation Ltd)	506	748
4	TAF (Tamil Nadu Arasu Cable TV Corporation Ltd Franchise)	1,578	1,578
5	FSHD (Fisheries and Fishermen Welfare Department)	67	67
6	VLE (Village Level Entrepreneur)	1,674	1,674
7	Cantonment	3	3

Ö	Total	9,455	9,720
Ω	Boards  MLAs office	234	234

#### **B. Citizen Portal**

In 2018, an open citizen portal was launched, allowing citizens to apply through a web-based open citizen portal for accessing e-Sevai services anytime/ anywhere from their own mobile phones or laptops. There has been a steady increase in the number of transactions on the citizen portal since then. In 2018, only 2% of the e-Sevai transactions have been delivered over the citizen portal, it has increased to more than 31% in 2022. The goal is to have 50% of the e-Sevai transactions through the citizen portal.

**Table 2: Year-wise transactions count** 

Year-Wise Transaction Count Jan 2016 -December 2022			
Year (Jan- Dec)	e-Sevai CSC	e-Sevai Citizen portal	Total
2016	1,02,91,198	-	1,02,91,198
2017	1,12,62,238	-	1,12,62,238
2018	1,04,11,812	1,83,304	1,05,95,116
2019	97,63,563	9,49,460	1,07,13,023
2020	75,86,335	14,00,513	89,86,848
2021	1,55,64,179	24,82,207	1,80,46,386
2022	92,30,915	28,64,841	1,20,95,756
Total Transac tions	7,41,10,240	78,80,325	8,19,90,565

#### C. e-Sevai for All

'e-Sevai For All' scheme was launched on 15.03.2023 with the objective of ensuring ease of opening e-Sevai centers, thereby allowing entrepreneurs to open e-Sevai centers in every village, every ward and habitation. All eligible citizens can now apply online and start their own e-Sevai centres after fulfilling some basic requirements.

A ticketing and feedback system has been implemented to collect feedback and complaints from operators / public regarding e-Sevai centres and services through a toll free number 18004256000 which will help to get feedback and solve grievances through a centralised system.

## 4. Digital Office Tamil Nadu (DoTN) - e-Office

e-Office is the application suite that allows automation of routine tasks and processes within the Government offices. Every file-handling employee of the Government is furnished with a unique name-based login ID, through which they can process the files regarding the subjects allocated to them. And also, each Department is configured as a single unit which enables the Head of the Department / Unit to monitor the pendency of all the Subordinate Offices under the Department/ Unit.

TNeGA is rolling out e-Office application to all offices under the administrative control of the Government of Tamil Nadu. In Phase-I, e-Office was implemented in all Departments of the Secretariat on 07.03.2022, onboarding 3645 users. In Phase-II, e-Office was implemented in all District Collectorates (and its subordinate

offices) on 30.06.2022, onboarding 23,303 users. In Phase-III, e-Office is being rolled out in Head of the Departments and so far 44 HODs have been configured with 15,104 users. Till date 14,38,067 e-Files have been created accounting to all the configured offices, which demonstrates the efficiency of the application in improving the Governance.

The Electronic File Management System (e-file) helps create 'paperless' offices, that allows speedy disposal of files and improves Governance. Communication both within and across offices is near real-time leading to improved efficiency in decision making. e-Office enhances transparency by which files can be tracked and their status is known to all at all times. The responsibility of quality and speed of decision making is easier to monitor which increases accountability. Above all, e-Office assures data security and data integrity. Hence,

e-Office is heading our State way towards effective governance and ultimately aiming to deliver better services to citizens.

### 5. TN Decision Support System - DeTN

### **5.1 Data Purity**

Government of Tamil Nadu envisions a Data-Driven Decision Support Infrastructure to improve Governance by assisting in the design, development and execution of Government schemes and programs. The Government, vide G.O. (Ms). No. 17, Information Technology (E1) Department, dated 23.09.2021, have designated Tamil Nadu e-Governance Agency (TNeGA) as the nodal agency for undertaking Data Purity project. TNeGA has collected one-time dump of from Government the electronic data Departments and thereafter, updates through differential files / Application Program Interface (APIs) from the Departments as mandated from

time to time by TNeGA. The Data Purity project aims to help the Departments to identify the right beneficiaries and weed out ineligible ones, to remove data of those deceased from the beneficiary lists, to create a beneficiary database which acts as a decision-making support system for the Government and to reduce the current system of silos and bring about Inter-Departmental sharing of data.

Thousands of crores were saved towards
Jewel loan waiver scheme and Self Help Group
Loan waiver scheme by weeding out ineligible
beneficiaries. Unorganised Labourers and
Differently Abled without ration cards have been
analysed for errors in inclusion and results are
shared for the issue of new ration cards. Below
Poverty Line (BPL) families without Chief
Minister's Comprehensive Health Insurance
Scheme (CMCHIS) cards are analysed and steps

have been taken by Health Department to issue new CMCHIS cards.

#### 5.2 CM Dashboard

The Chief Minister's Dashboard is an internal governance tool launched on 23.12.2021 and designed by a team of Business Intelligence (BI) Developers, Business Analysts and Liaison Data Analysts in TNeGA. Its purpose is to provide updated information on a daily, monthly and yearly basis, with some Departments having real-time information and others having data collected periodically from the field level.

Since its launch, the Dashboards have been used as an essential component to track the performance of various Departments, schemes, policing efforts and overall governance. Originally designed as an information platform, the Dashboards have

evolved into a tool that is useful in evidencebased decision-making.

The Dashboard covers 32 Departments, involving over 100 Directorates, with more than 135 Dashboards completed and regularly updated. The team focuses on accessing data in an 'as-is' situation, ensuring the integrity of data to the extent possible.

Each Dashboard is uniquely designed to meet the specific needs of each Department. Key Performance Indicators are finalized with each Directorate and a business requirement document is compiled. The Dashboards are developed after sign-off from the Departments and restricted access with security of phone numbers with OTP is provided. Periodic and monthly inferences drawn from the Dashboards are being shared with respective Departments in the form of analytical notes.

During the implementation of the Dashboards, inefficiencies were identified in several Directorates and Departments due to offline processes, cumbersome red tape and procedures with little value. To address this, a team was formed to assess, analyze, evaluate, track each procedure and propose changes that would simplify and make the process more effective. Flow charts are extensively used and the background history of the process is examined for its current relevance.

Overall, the Chief Minister's Dashboard represents a significant step towards transparency and data-driven decision-making in Tamil Nadu's governance. Periodic review meetings based on the Dashboards are chaired by the Hon'ble Chief Minister, who provides directions from time to time. Secretaries and Heads of Department are increasingly utilizing the Dashboards to rectify gaps and stagnancy, if

any, in the implementation of scheme. The upcoming integration of e-portals of Departments through Application Program Interface (API) will further improve the effectiveness and efficiency of the Dashboards, enabling good governance.

### **6. TNeGA Core Projects**

### 6.1 State Family Database (SFDB)

State Family Database (SFDB) is envisioned as a data-driven decision-support infrastructure for improving Governance by aiding planning, implementation and execution of Government schemes and programs. It will complement the existing Department infrastructure by enabling data harmonization and synchronization among various Departments to ensure transparent and seamless service delivery to citizens. Each of the Departments of Government of Tamil Nadu have their own

applications and associated databases. All those databases would be used to build SFDB core database and it is used to uniquely identify the beneficiaries across the State. It would enable proactive delivery of Government benefits and services to citizens in an inclusive manner.

Makkal Portal and Back Office Portal will be released in a phased manner.

# **6.2 Tamil Nadu Geographic Information System (TNGIS)**

Geographic Information System (GIS) is a tool for managing, analysing and decision making by linking the spatial and non-spatial data. Tamil Nadu Geographical Information System (TNGIS) is established with an objective of creating a common GIS Platform for the State wherein all Departmental assets, facilities, projects being executed by various Departments using geospatial technologies (Remote Sensing data from Satellites, Drone, Aerial and terrestrial

platforms including underground data) are visualised together spatially. The seamless spatial datasets of all Departments along with their integrated MIS data through TNGIS shall be shared across Departments and used for integrated planning and decision making process in the State.

Currently, TNGIS is managing over 300 data layers collated from various spatial Departments that are being shared with Departments in need. Last year, around 70 lavers of data are shared with about Departments. The available data is also made TNGIS web available in the portal https://tngis.tn.gov.in. Based this. on Department specific applications are developed.

Major highlights of completed activities in 2022 are:

- A. e-Munnetram application is used to monitor the physical and financial progress of large value infrastructure projects.
- B. Creation of administrative boundaries with the help of Rural Development and Urban Development Departments.
- C. TNGIS has coordinated with 10 Departments and has shared 29 spatial layers to PM Gatishakti portal.
- D. Development of applications for Rural
   Development, Excise Department, State
   Environmental Impact Assessment
   Authority (SEIAA), Highways, etc.

For the year 2023, following activities are proposed under TNGIS:

A. Revamping of existing portal with additional tools to perform all types of spatial analysis, share data through Application Program Interfaces (APIs) and develop theme specific dashboards.

- B. Develop mobile/web application to capture all crop information in each season with geofenced validation. This data will be used for updating the adangal database and deriving statistics that can be used for planning and policy making.
- C. Develop application for getting the property details based on its survey number, current location, nearest facilities/services provided by the Government.
- D. To develop a mobile application for mapping all Governmental assets and facilities for planning and decision-making process.
- E. Develop a GIS based project management application to track the physical and financial progress of all infrastructure related project works.

TNGIS will prepare and publish the standards for all spatial data layers in consultation with all user Departments. A Geospatial policy of Tamil Nadu will be prepared which shall dwell upon the data sharing / exchange policy for all spatial data contents. TNGIS team will be strengthened to cater to the demands of geospatial needs in various Departments.

#### **6.3 Know Your Government Portal**

In the era of digital world, the website is the first go to medium to know about a Government and its functioning. As a first step, the Tamil Nadu State Government website **tn.gov.in** is taken up for redesign. In the first phase, the project aims to re-design the existing State portal with world class design, user friendly navigation and as an inclusive website with necessary tools for differently abled people. The website shall act as a medium to

disseminate the information on the Government schemes and services. The website shall feature Artificial Intelligence (AI) based CHATBOT in the 1<sup>st</sup> phase. The public can search the details of a scheme and service using the CHATBOT. The website shall also enable features to engage with the public effectively by means of polls, competitions, campaign and crowd sourcing. The webpage shall also feature as a one stop shop to enable a downloadable link to citizen based mobile applications developed by various Government Departments.

In phase-2, the Secretariat Departments, Heads of Departments, Agencies will be taken up for revamping. Currently the Departments, Heads of Departments, Government agencies websites are being managed with various vendors. In future, the sites will be managed by the Know Your Government (KYG) portal team of the Government.

The project is being designed by the team in TNeGA and implemented through NIC team at Secretariat.

# 6.4 Artificial Intelligence / Machine Learning (AI/ML)

Artificial Intelligence / Machine Learning can provide new ways of approaching problems and to meaningfully improve citizen's lives. The focus in TNeGA is on applying AI to sectors such as Healthcare, Agriculture, Energy and Education that requires a concerted, collaborative effort across all sectors. The current focus areas are:

- 1. Trustworthy and accessible data
- 2. Computer Vision
- 3. Voice Based Artificial Intelligence (AI) and Chatbots
- 4. Applied Data Science
- 5. Geo-Spatial Analytics

TNeGA is working closely with the Departments on the above focus areas. Following are some of the AI projects that TNeGA has completed and successfully rolled out to the citizens and Departments:

#### A. e-Paarvai

A cataract detection mobile appusing AI is rolled out for the whole State. So far 20,000 patients with cataract have been detected and reported to District Hospitals for further advice and surgery.

# B. Facial Recognition based Attendance System 2.0 (FRAS 2.0)

Facial Recognition based Attendance System 2.0 (FRAS 2.0) is developed and deployed as an Android application for scaling across the State. The key feature of the app is that field staff can mark the attendance from their respective locations and their attendance is marked with their geolocation. Currently, pilot is done for Directorate of Public Health (DPH) with 1000 frontline health workers who are on the fields. Once completed, it will be rolled out for 35,000 frontline health workers. Department of Sports and Youth welfare and Tamil Nadu Civil Supplies Corporation have shown interest in deploying this solution for their staff.

#### C. AI based Pest and Disease detection

Al based Pest and Disease detection has been developed and deployed in Uzhavan mobile application and the farmers of Tamil Nadu are already using the same and receive expert advice from the Department of Agriculture and Farmers Welfare.

## D. Financial Analytics Tool

Proof of Concept (PoC) for Financial Analytics tool has been developed for

Department of Finance focused on Debit management.

# 6.5 Tamil Nadu Blockchain Backbone – Nambikkai Inaiyam

Nambikkai Inaiyam will enable Departments of Government of Tamil Nadu to unified infrastructure to use Government data and documents and track the provenance of digitized assets. The platform is being used to develop various e-Governance applications. Use cases are being implemented to include securing land records. securing academic certificates and marksheets and e-Sevai certificates.

Once the project is live, authorities, employers, higher education institutes can securely verify Government issued certificates, marksheets, receipts and licenses. Additionally,

present day and legacy Tamil Nadu land records would be preserved securely.

### 7. Government Department Projects

TNeGA is designated as the optional procurement agency for the software related works for the Government. The organisation is providing consultancy services, project management services to the Government organisations. The organisation is ensuring to design, develop, maintain and operate website, web applications, mobile applications, AI/ML applications and data engineering to the Government Departments on demand basis.

The Organisation is instrumental in enabling and harnessing the power of Information Technology to better implement schemes and to deliver public services to the citizens. The organisation has supported the Departments to implement, monitor the flagship

Government schemes such as Mudhalvarin Mugavari, Pudhumai Penn, Digitalisation of Assembly Records, Oottasatthai Uruthisei and Chief Minister's Breakfast Scheme.

The Organisation has been providing technical consultancy services to all Departments including Finance, Health & Family Welfare, Commercial Taxes, Greater Chennai Police, Forest, Welfare of Differently Abled, Labour and Employment, Planning and Development Departments.

During 2022-23, TNeGA has supported other Departments to digitise their legacy records, create applications that enable delivery of services digitally, creation of websites, data collection applications, scheme monitoring applications, asset management applications, project management and monitoring applications, end to end ERP applications, recruitment solutions, crowd fund sourcing

platforms, e-learning platforms, e-commerce applications and so on.

## 7.1 Moovalur Ramamirtham Ammaiyaar Higher Education Assurance Scheme (MRAHEAS) - Pudhumai Penn Scheme

The Government of Tamil Nadu has launched the Moovalur Ramamirtham Ammaiyaar Higher Education Assurance Scheme (MRAHEAS) - the Pudhumai Penn Scheme which is a unique scheme to enhance the enrolment ratio of girl students from Government schools to Higher Education Institutions. Through this scheme, a financial assistance of Rs. 1000 per month will be provided to all the eligible girl students their completion till of UG degree/Diploma/ITI/any other recognized course. The incentive amount under this scheme will be disbursed directly to the Bank Account of the student through Direct Benefit Transfer (DBT).

The major feature in the implementation of this scheme is that it provides an online portal for registration of beneficiaries, approval of eligible students, disbursement of payment which are taken care seamlessly. The application process is initiated only by the higher education institutions to avoid duplicate and incorrect registrations.

### **Innovations in the Scheme:**

- ► The basic profile details of the students are fetched from the Educational Management Information System (EMIS), which avoids manual and incorrect data entry.
- ► A pre-verified students database has been received from the School Education Department and the same has been incorporated as a part of the application which provides a provision for autoapproval of the application provided the students have an active bank account.

- ▶ Aadhaar based e-KYC was introduced in this application to help the institutes validate the identity of the student along with basic details such as Name of the Student, Date of Birth, Gender, Address and photo from Aadhaar.
- ▶ An active bank availability for the student is being verified through an API integration with NPCI Mapper. This helped to ensure that the disbursement is done directly to the student's bank account using Aadhaar based Direct Benefit Transfer (DBT).

### **Impact of the Scheme:**

- ➤ This application has drastically reduced the application filling time, as most of the data are fetched from various databases.
- ► The provision of Auto-approval helps in disposing the application instantly.
- ▶ It is observed that there is a drastic increase in the number of enrolments of

- girl students across the State after the announcement of this scheme.
- ▶ As on date, around 14,758 students have enrolled in various higher education institutions after a gap of 2 to 8 years after completion of school education.
- ▶ Data from this portal will help both the School Education and Higher Education Departments to track the students who do not pursue higher education (dropouts after school education), in order to identify them and bring them to the mainstream of education.
- ► Till 28<sup>th</sup> February 2023, around 2,02,824 students have benefitted from this scheme.

# 7.2 Digitization and Management of Electronic Records of Legislature (DMERL)

Tamil Nadu Legislative Assembly is one of the oldest legislatures in India formed in 1921. Since inception, the houses have had many freedom fighters, stalwarts, brilliant minds and remarkable leaders over the last 100 years. The house is credited for passing some landmark legislations and the floors have witnessed key discussions, debates and announcements which are recorded and catalogued by the legislature.

This project aims to digitize approximately one million pages of records in form of debate books, reports of various committees and papers laid before the house along with other significant contents like newspaper clippings, images, audio and video and manage them using advanced technology, enabling the legacy of the legislature readily accessible to the citizens through a web portal. Tendering process has been completed and Phase-I of the project pertaining to digitization of debate books from the year 1921 to present date is likely to be completed by 16.11.2023.

# 7.3 Mobile application for CM Breakfast Scheme App

This Mobile application is developed for managing and monitoring the Chief Minister's Breakfast Scheme for ensuring greater attendance and learning in Government schools. A centralised kitchen-based monitoring Module has been developed for schools in Corporations and Municipalities to track cooking, delivery and serving of breakfast meals. A Fleet Tracking System has been enabled to ensure timely movement and delivery under this module. A second decentralised module has been created for rural areas, where added features like Offline capturing has been enabled for remote and hilly areas.

From day one of roll-out of the scheme, a Real time Dashboard is made available to all stakeholders for monitoring by key decision makers at the level of School Management Committee, Village, Block/ Zone, Municipality/ Corporation and District level. Push SMSs are provided at 11 AM to all these decision makers as part of Exception handling.

# 7.4 Reporting Application for Namma Grama Sabha

The Namma Grama Sabha app has been developed to help the Rural Development Department to monitor whether the Grama Sabha takes place with the quorum of minimum participants along with online reporting of agendas and resolutions. Data collected from the application are geo/time stamped and have enabled the Rural Development Department to instantly analyze the pattern of participation, tabled resolutions and passed in each panchayat. The Department now uses this App as a staple feature of every Grama Sabha that is conducted. Features of video recording, offline capture of data etc., have been added in subsequent versions. The Application has enabled the Department to overcome the drudgery of collecting, reconciling and correcting the data through excel sheets from 12,525 Village Panchayats and 388 Blocks.

## 7.5 Other Department Key Projects

resources of TNeGA have instrumental in providing technical consulting services to design and develop system that are enabling digital services delivery channel for the Department. STAR 2.0 Project implementation in Registration Department, Mega City project implementation by Greater Chennai Department, Financial Analytics tool, Public tracking system for the Finance Department, HMIS for Health Department, Tamil Nadu Integrated Housing Information Nadu System for Tamil Urban Habitat Development Board, supporting Tamil Virtual Academy in identification of tools for Tamil Computing and Software Development are some examples.

TNeGA have been supporting the following Departments for enabling the end to end computersation of their business process; Tamil Nadu Water Supply and Sewerage Board, Forest Department, Chennai Metro Water Supply and Sewerage Board.

Through computerisation, the services delivered by the Department will be in digital mode, enabling faster service delivery mechanism and effective monitoring of the service delivered.

## 8. IT Services offered to other Departments

#### 8.1 Aadhaar as a Service

Directorate of e-Governance / TNeGA is the State Registrar for Unique Identification Authority of India (UIDAI) to carryout Aadhaar enrolment through Permanent Enrolment Centres across Tamil Nadu. As the registrar, TNeGA is providing AUA (Authentication User Agency/ KUA (e-KYC User Agency) services to 12 Sub-AUA/ KUA Departments and onboarding of 8 Departments is in process.

To avoid biometric failures. TNeGA has successfully implemented IRIS authentication for Civil Supply and Consumer Protection Department. To increase the enrolment rate of girls from Government schools to higher education institutions, the Government of Tamil Nadu has launched Mooyalur Ramamirtham Ammaiyar Higher Education Assurance Scheme (Pudhumai Penn Scheme). To speed-up the approval process, Aadhaar **based e-KYC** was introduced in the application for the verification and validation of the student details along with the photograph.

Electronics Corporation of Tamil Nadu (ELCOT) and Tamil Nadu Arasu Cable TV Corporation (TACTV) have been appointed as the enrolment agencies for Tamil Nadu e-Governance Agency. Aadhaar enrolment is done free of cost for the public.

The summary of transactions of Aadhaar enrolment during 2022-23 is presented below:

EnrolmentAge ncy	No. of Centr es	Total No. of Enrolmen ts (In lakh)	Aadhaar generat ed from UIDAI portal (In lakh)
TACTV	318	18.07	2.08
ELCOT	237	2.43	2.11
Total	555	20.50	4.19

Table 4: Aadhaar Enrolment & Aadhaar Generated details for the FY 2022-2023

#### 8.2 e-Mail as a service

As a part of e-Governance Initiative, the Government of Tamil Nadu has decided to create e-Mail IDs both Official and name based personal IDs with the **'tn.gov.in'** domain at free of cost to all Officials working in various Government Departments / Undertakings / Agencies and Boards for the Official communication. Moreover, Department specific email IDs are also created for key Government units as per their requirement.

Each employee will be assigned a 'designation' based e-Mail account as well as 'name' based e-Mail account. Currently, in the year 2022-23 around 65,516 e-mail IDs have been created for the Government employees with the help of NIC.

#### 8.3 SMS as a Service

Tamil Nadu e-Governance Agency (TNeGA) is providing SMS Gateway to all Government Departments at a low cost and effective manner. The SMS platform will allow user Departments to send messages from their application to the citizens. SMS Gateway services also guarantees complete security of data. APIs for bulk SMS Gateway services are efficient and flexible. SMS gateway also ensures speed and reliability. TNeGA is currently serving around 24 Departments / Boards / PSUs / Agencies in Tamil Nadu and have handled SMS transactions count of 27.80 crore during the year 2022-2023.

#### 8.4 e-Sign as a Service

e-Sign service facilitates instant signing of documents online by utilizing the service of Unique Identification Authority of India (UIDAI) for on-line authentication and Aadhaar e-KYC. Besides, the e-Sign services provide an easy and secure way to digitally sign information anywhere, anytime and also avoid any misuse, thus making it more secure. TNeGA has engaged Centre for Development of Advanced Computing (C-DAC) as e-Sign Service Provider (ESP) to cater the e-Sign service needs of all the Government Departments of Tamil Nadu.

e-Sign service supports both OTP and Biometric based modes of authentication for leveraging e-KYC service of UIDAI. The adoption of the use of digital signing service is needed extensively to replace the redundant paperwork with an end-to-end digital solution.

At present, the e-Sign service of TNeGA is being utilized by 8 Departments like Health, Registration, Commissioner of Land Administration, Geology & Mining, Chennai Metropolitan Development Authority, Directorate

of Town & Country Planning, Education and Social Defence. Around 35,71,517 e-Signatures were utilised during the year 2022-23.

## 8.5 Online Exam as a Service (EaaS)

TNeGA is providing "Online Examination" as a Service that can be availed by various Government Departments to cater their recruitment needs in order to fill their vacancies in a time-bound, transparent and hassle-free, secured manner. In this regard, TNeGA has selected M/s. NSEIT Ltd., as a System Implementation Partner (SIP) for providing End-to-End online examination service to all the Government Departments on a rate contract basis for a predefined scope of work. The scope of work includes Pre-examination process, Examination process and Post examination activities.

During the year 2022-23, six Departments namely, Chennai Metropolitan Development Authority (CMDA), Tamil Nadu Veterinary and Sciences University (TANUVAS), Animal Teachers Recruitment Board (TRB), Medical Services Recruitment Board (MRB), Sports Development Authority of Tamil Nadu (SDAT) and Madras High Court (MHC) have utilized this service of TNeGA and have successfully completed the recruitment process for 492 vacancies in a secure and hassle-free manner. In 2022-23, around 11.4 lakh candidates have written various exams through this online examination service.

## 8.6 IT Security Audit

Tamil Nadu e-Governance Agency (TNeGA) helps in conducting Security Audit of all Government websites / web applications / mobile application by engaging the Indian Computer Emergency Response Team (CERT-IN)

empanelled auditors in accordance with the applicable guidelines and standards as specified by CERT-IN / STQC.

The security audit is mandatory before hosting any website / web applications in the Tamil Nadu State Data Centre (TNSDC) and before expiry of the audit certificate or whenever there is a change in the website / web applications.

The security audit process has to be performed every year irrespective of the website being static or dynamic as well as when there is a major upgradation / change made in the application within a span of a year from the date of issuance of clearance certificate. Moreover, TNeGA conducts security audit of all Government websites / web applications/ mobile applications once a year free of cost and continues to do the same on subsequent years also.

So far, in the year 2022-2023, around 72 websites / web applications / mobile applications of various Government Departments have been audited under this scheme.

#### 9. Policies and Standards

#### 9.1 Reference Standards

The 'Reference Standards' for data and Cyber Security version 1.0 is a compilation of the list of standards relevant to e-Governance projects. The standards have been categorized mandatory and recommended. as e-Governance applications / software / hardware specifications by Departments have to comply with the mandatory standards and all tenders will be reviewed and approved for compliance at every stage of the project by Standards Compliance Technical Committee (SCTC), chaired by CEO, TNeGA and is being enforced for all new e-Governance applications.

# 9.2 Tamil Nadu Data Policy

TNeGA is the Nodal Agency for Government data as per the Data Policy issued vide G.O.(Ms).No.16, Information Technology (E1) Department, dated 10.03.2022, for the State. The data collected by TNeGA will be coowned by it on behalf of the Government of Tamil Nadu with the primary owner being the Agency / Department / Ministry / entity that collected and provided it to TNeGA.

CEO, TNeGA, is the State Chief Data Officer for implementing various tenets of the policy. The thirteen principles of the policy are as follows: -

- I. Openness
- II. Privacy
- III. Ethics and Equity
- IV. Flexibility
  - V. Transparency

VI. Legal Conformity

VII. Protection of Intellectual Property

VIII. Interoperability and Standards

IX. Quality

X. Security

XI. Accountability and Formal Responsibility

XII. Sustainability

XIII. Usability

Currently, the implementation of this policy is in progress.

#### 10. GIGW Standards

To improve the usability, user-centricity and universal accessibility of information and services on Government websites/applications, the Government of India (GoI) has issued guidelines for designing, developing and maintaining websites called the Guidelines for Indian Government Websites (GIGW). Conformity with these guidelines will ensure a

high degree of consistency and uniformity in content coverage, presentation security and accessibility and promote excellence in Government solutions in the web space.

TNeGA continuously verifies the Government websites and quides all Government Departments to take necessary measures to update Government websites / apps to comply with GIGW guidelines. Totally 424 Government websites were tested on a fornightly basis and as of the report generated on March 16, 2023, screen reader was available for 80 websites, font increase and decrease feature is available for 100 websites. TNeGA is coordinating with the Departments / Heads of Departments to implement the screen reader, color contrast, font increase and decrease features.

#### 11. Achievements and Awards

- NeSDA Tamil Nadu ranks 2<sup>nd</sup> in NeSDA 2021 Assessment on the effectiveness in delivering online services to citizens with over all compliance of more than 85%.
- ► AI based Pest and Disease detection using Uzhavan mobile application won the NASSCOM AI Game Changers Award under the Exemplary Category for the year 2022.
- ► Three AI Projects FRAS, AI based Pest and disease detection and e-Paarvai are listed in the INDIA AI 75 @ 75 research journey report.
- e-Governance GOLD AWARD 2022 for the Moovalur Ramamirtham Ammaiyar Higher Education Assurance Scheme.
- ► e-Governance SILVER AWARD 2022 for the e-Munnetram application.

#### 12. iTNT Hub

The iTNT Hub is India's first Innovation

Hub established in a Public Private Partnership

Model along with contribution from Government

of India

iTNT Hub is located at Anna University Campus in Guindy, in a 30,000 sq. ft. space. The iTNT Hub will focus on the promotion of emerging and deeptech startups, enabling Industry-academia collaboration, build globally ecosystem partnerships, enabling MSMEs and Startup Innovators with Industrial Design and Production support and through programs enable Startup entrepreneurs from Tamil Nadu to access global markets.

# 13. Sustainable Development Goals (SDGs)

SDG is an Inter-Governmental set of 17 aspirational goals with 169 targets, further elaborated through indicators focused on measurable outcomes. The 17 Sustainable Development Goals (SDGs) enshrine a vision for better and more sustainable future for all by balancing economic, environmental and social components.

In Tamil Nadu, the Government has constituted a High-Power Committee under the Chairmanship of Chief Secretary to Government to oversee the implementation of SDGs. Eight thematic Working Groups have been formed to review and monitor the achievement of goals and targets. The implementation is coordinated by the Planning and Development Department and the State Planning Commission.

TNeGA will capture the data of Sustainable Development Goals and their associated targets for all Departments / Boards. A SDG unit has been formed in the IT & DS Department with the following composition:

Joint Chief Executive Officer, TNeGA	Unit Head
Joint Director (Technical), TNeGA	Member
General Manager (Admin), TACTV	Member
General Manager (HR &Admin), TANFINET	Member
General Manager (HR), ELCOT	Member

The SDG indicators related to IT & DS Department and their achievements are as follows:

SI. No.	Indicators	2022-2023 Performance	
		(As on 20 <sup>th</sup> Mar 2023)	
1	16.6.1: No. of Government services provided online to citizens	235	

2	16.6.1a: No. of Department / Agencies integrated for mobile Governance	64
3	16.6.1b: No. of e-transactions on e-Taal	241.42 crore
4	16.6.1c: No. of operational Common Service Centres	9,455

#### CHAPTER-IV

# TAMIL NADU ARASU CABLE TV CORPORATION LIMITED (TACTV)

#### 1. Introduction

As per G.O.(Ms).No.22, Information Technology Department, dated 13.08.2007, "Arasu Cable TV Corporation Ltd." was formed under the Companies Act, 1956 on 04.10.2007 with the objective to safeguard the livelihood of Local Cable TV Operators and also to provide high quality Cable TV service at a low cost to the public. "Arasu Cable TV Corporation Ltd." was later renamed as "Tamil Nadu Arasu Cable TV Corporation Limited" (TACTV).

#### 2. Vision

To provide high quality digital Cable TV service, e-Sevai Services and Internet Services to the public at an affordable cost using the latest and Emerging Technologies.

#### 3. Mission

- To provide high quality Digital Cable TV service to the public at an affordable cost through the Local Cable Operators.
- To provide enabling environment to facilitate the livelihood of Local Cable Operators through cable TV and Internet Services.
- To provide high quality Internet Service to the public at an affordable cost through the Local Cable Operators.

# 4. Digital Cable TV Service

Ministry of Information and Broadcasting, Government of India, granted the DAS License to TACTV on 17.04.2017 for providing Digital Cable TV Service. TACTV is the first State Government Undertaking in the Cable TV industry to get DAS License in the Country. In

order to ensure best quality pictures with the latest Digital Cable TV technology, TACTV also upgraded its existing MPEG2 Digital Head End at Chennai to MPEG4 Digital Head End with higher channel capacity in Digital Transmission.

TACTV started the Digital Cable TV Service with the upgraded MPEG4 Digital Head End at Chennai and distributed free Standard Definition Set Top Boxes on 01.09.2017. The High Definition Cable TV service was started on 02.07.2018 at 5 locations Chennai, Salem, Coimbatore, Tiruchirappalli and Madurai.

TACTV is providing Digital Cable service at the subscription fee of Rs.140+GST with 218 channels (136 FTA channels + 82 PAY channels). This is the lowest Digital Cable TV subscription rate in the country. The revenue sharing pattern is fixed as Rs.70/-+GST for TACTV and Rs.70/-+GST for Local Cable TV Operators.

Steps are being taken to provide New STBs with the latest technology to ensure that quality digital TV signals are reaching the common people at an affordable cost.

#### 5. Arasu e-Sevai Centers

TACTV has established Arasu e-Sevai Centers to provide Government to Citizen Services (G2C) in 2014. At present, TACTV is operating 511 Arasu e-Sevai centers across the State in urban areas and providing 136 Citizen Centric Services. In addition to the above, the following service is exclusively provided:

Uploading the Certificates of shortlisted candidates for Tamil Nadu Public Service Commission (TNPSC).

To expand the reach of Arasu e-Sevai centers to the General public and to encourage the unemployed youth of Tamil Nadu provided with self employment, TACTV has floated an

Expression of Interest to empanel interested Private Internet Browsing centers to act as franchise of Arasu e-Sevai centers in urban areas on Revenue Sharing model. As on date, 2148 franchises have been empanelled.

# 6. Permanent Enrolment Centers (PECs) for Aadhaar

The Government of Tamil Nadu appointed Tamil Nadu e-Governance Agency (TNeGA) and Commissionerate of e-Governance as Registrar for Aadhaar enrolment in Tamil Nadu. The TNeGA has authorized TACTV to act as Enrolment agency for Aadhaar enrolment from 01.10.2016. TACTV has established 318 Permanent Enrolment Centers across the State. Steps will be taken to increase the counters in the above mentioned 318 Permanent Enrolment Centers based on requirement from public.

# 7. Internet Service to Home through Tamil Nadu Internet and Connectivity Services Limited (TANICS)

TACTV has formed a subsidiary company namely, Tamil Nadu Internet and Connectivity Services Ltd. (TANICS) on 05.11.2020, to provide internet related services to the public at an affordable cost. Steps will be taken to obtain the ISP License from Ministry of Communications and Information Technology.

#### **CHAPTER-V**

# TAMIL NADU FIBRENET CORPORATION LIMITED (TANFINET)

Tamil Nadu FibreNet Corporation Limited (TANFINET) is a Special Purpose Vehicle (SPV) formed by the Government of Tamil Nadu to implement the BharatNet phase II project, which provide high-speed broadband aims to connectivity in the rural areas of the State. For extending connectivity to urban and semi-urban areas, 'TAMILNET' is also envisaged. Once established, the Unified Digital Infrastructure combining BharatNet and TamilNet will digitally empower every citizen of Tamil Nadu the power of Information harnessing Technology.

#### 1. BHARATNET

BharatNet project is currently being implemented by TANFINET at an approved cost

of Rs.1815.31 Crore (funded by Universal Service Obligation Fund, Department of Telecom, Gol). Under this project, Optical Fibre Cable for 57,500+ Km is being laid to connect all the 12,525 Gram Panchayats of the State. One Gbps bandwidth is envisaged to be provided in the Gram Panchayats which will allow the service providers to extend high speed broadband connectivity to the rural areas. By establishing infrastructure. facilities such an like Telemedicine, Tele-Education, dissemination of new technologies, etc. can be made available to the rural people.

The implementation of the project has been divided into four packages (A, B, C & D) geographically as follows:

Package	No. of	No. of	OFC Route	
Name	Blocks	GPs	Aerial	UG
			Length	Length
			(in	(in
			Km)	Km)
А	75	3,095	12,221	1,696
В	94	3,001	12,142	1,558
С	110	3,326	14,071	1,438
D	109	3,103	12,703	1,924
Total	388	12,525	51,137	6,616

The Master Service Agreement (MSA) was executed with the Master System Integrators of all the four packages towards the implementation of the BharatNet Phase-II project in Tamil Nadu and the Hon'ble Chief Minister of Tamil Nadu inaugurated the commencement of Optical Fibre Cable (OFC) laying works in Muthalakurichi Gram Panchayat of Thuckalay

Panchayat Union in Kanniyakumari District on 09.06.2022.

The on-field implementation of the BharatNet Phase-II project is going on across the districts. So far, 2007 Gram Panchayats of the State are connected through OFC to the nearest block and made visible in the Network Operation Centre (NOC) at Chennai. It is expected that all the Gram Panchayats in the State will be connected through the BharatNet project over a period of one year.

# 2. Last Mile Connectivity

Under the Special Assistance Scheme to States for Capital Investment for 2022-23, BharatNet Last Mile Connectivity Project has been accorded approval for an amount of Rs.184 crore. This project aims to connect around 20,000 Government Offices using the BharatNet Network. The existing Government offices covered under the present TNSWAN

network are also planned to be gradually migrated to this network.

# 3. Unified Digital Infrastructure (UDI)

"TamilNet" project is proposed to connect all the Corporations, Municipalities and Town Panchayats through optical fibre enabling urban citizens to reap the benefits of the digital revolution at an affordable cost. While BharatNet aims to provide connectivity to only the rural areas and would primarily act as an access TamilNet envisages enabling network. connectivity to all urban & semi-urban areas and would act as a Core and Aggregation network. TamilNet will also act as the backhaul optical fiber infrastructure for BharatNet. It will help in establishing the Unified Digital Infrastructure along with BharatNet. This infrastructure will act as the backbone of the State in providing digital services to the people of Tamil Nadu with assured quality at an affordable cost.

# 4. Benefits of Unified Digital Infrastructure (UDI)

Currently, various Government Departments such as School Education, Higher Tourism. Education. Police. Information Digital Services, Health, Technology and Co-operation, Food and Consumer Protection, Registration Departments etc., providing citizenonline services the centric in State Tamil Nadu, incur high cost for internet & intranet services to meet the Departmental With requirements. Unified Digital this Infrastructure (TamilNet + BharatNet), the Department users can be migrated to network and their requirements can be met at less cost with much higher bandwidth. This will improve the socio-economic conditions of the State by creating more jobs, especially in rural areas and by delivering services at the doorsteps of the people.

#### **CHAPTER-VI**

# TAMIL VIRTUAL ACADEMY (TVA)

#### 1. Introduction

Tamil Virtual Academy was established as Tamil Virtual University (TVU) and registered under section 27 of Tamil Nadu Co-operative Societies Act 1975 and functioning under the administrative control of the Information Technology and Digital Services Department. Tamil Virtual University was renamed as Tamil Virtual Academy on 16<sup>th</sup> July 2010. The main aim of the TVA is to provide Tamil education through internet for the Tamil Diaspora, Digitization of Tamil Books and promote Tamil Computing.

# 2. Objectives

- Conducting Certificate, Higher Certificate, Diploma, Higher Diploma and Degree courses in Tamil.
- Promoting Tamil Computing.
- Maintaining Tamil Digital Library and Digital Cultural Repository.
- Providing information about Tamil culture and civilization to the Tamil Diaspora and others across the Globe.

## 3. Academic Programmes

Primary, Certificate, Higher Certificate, Diploma, Higher Diploma and Degree (B.A. (Tamilology)) courses are being offered by TVA. The details are as follows:

# 3.1 Primary Course

Primary Course is designed for Kindergarten students.

#### 3.2 Certificate Course

Certificate Courses are offered at three levels as below:

- Basic Level (equivalent to classes 1 & 2)
- Intermediate Level (equivalent to classes
   3 & 4)
- Advanced Level (equivalent to classes
   5 & 6)

So far, 11,162 students have passed in the above courses

# 3.3 Higher Certificate Course

Higher Certificate Courses are offered at three levels as below:

- Grade 1 (equivalent to classes 7 & 8)
- Grade 2 (equivalent to classes 9 & 10)
- Grade 3 (equivalent to classes 11 & 12)

So far, 1,225 students have passed in the above courses

# 3.4 B.A. (Tamilology) Degree Programme

B.A. (Tamilology) Degree programme is modular in its structure comprising of Diploma, Higher Diploma and Degree courses.

The details of the students passed so far are as follows:

❖ Diploma Course - 2372

❖ Higher Diploma Course - 1755

❖ Degree Course - 1394

The above academic programmes are provided through 135 contact centres in 27

countries. The details have been uploaded in TVA website (www.tamilvu.org).

# 4. Other Projects

#### 4.1 Theera Kaadhal Thirukural

In order to promote Thirukural concepts among the youth, Tamil Virtual Academy is taking steps to undertake various activities under 'Theera Kaadhal Thirukural'.

A painting competition titled 'Kuraloviyam' was conducted for school and college students as first activity. The prizes for the best paintings were distributed by the Hon'ble Chief Minister of Tamil Nadu on 15.01.2022 (Thiruvalluvar Day) at Valluvar Kottam. Thirukkural daily table calendar book was printed using the best 365 paintings and it was released by Hon'ble Chief Minister. This calendar book is designed as an infinity Calendar and it is available in TVA.

On 21.12.2022, Thirukkural dance drama titled *'Kural Inidu*' was performed at Kalaivanar Arangam.

## 4.2 Tamil Parappurai Kazhagam

To provide financial assistance to the organizations teaching Tamil as a second and third language abroad and train teachers, Tamil Parappurai Kazhagam has been launched. An amount of Rs. 1.00 crore has been sanctioned. Online Tamil education is currently being provided in 6 levels. Now it is revised into 5 stages (skills based) and the lesson writing works are under progress. Launching ceremony of textbooks, supplementary tools for level-1 first term and Tamil Parappurai Kazgham activities was inaugurated by Hon'ble Chief Minister of Tamil Nadu on 24.09.2022.

The following activities are being carried out under Tamil Parappurai kazhagam:

- Basic Silambam training videos have been created.
- Presentation of Tevaram hymns in contemporary music along with visual content.
- Curriculum for Diploma in Tamil teaching to the teacher volunteers has been developed and the course will be provided in association with Tamil Nadu Teachers Education University.
- Teachers have been empanelled for handling online Tamil classes. Online Tamil classes for students are currently being conducted.

# 4.3 Higher Education

 A book on Tamil Grammar called "தமிழைப் பிழையின்றி எழுதுவோம்" has been developed.

- Revision of syllabus for Bachelor's Degree in Tamilology is under process.
- A new syllabus has been developed for Post Graduate Degree in Tamilology.

## **5 Digital Library**

# 5.1. *Tamilinaiyam* - Digital Library

TVA has created a Tamil Digital Library (www.tamildigitallibrary.in) which contains rare books, periodicals of Tamil literature, religion, history, medicine from 18<sup>th</sup> century onwards and also contains palm-leaf manuscripts. This is one among the largest digital library in the South Asian languages. More than 70 thousand books, periodicals and 7,68,097 palm-leaf manuscripts are available. The library is being continuously enriched by adding more rare documents. This library has been viewed 4,41,22,519 times by the users.

## **5.2 Inclusive Digital Library**

An amount of Rs. 1.00 crore has been sanctioned to improvise the digital library into Inclusive Digital Library for the use of visually impaired. Now 14 lakh pages are being converted from image to text format by using OCR technology.

# 5.3 Digitization of rare audio-video, photographs and other historical documents

An amount of Rs. 1.00 crore has been sanctioned to digitize rare audio-video, photographs and other historical documents. So far 5,535 audio-visual, photographs and other documents have been digitized. Since the revamping of the digital library website is under progress, these content will be uploaded once the work is completed.

#### 5.4 Tamilar Tagavalaatruppadai

TVA Tamilar has created Tagavalaatruppadai as a comprehensive and collaborative repository of Tamil language, literature and arts. Under this scheme. Tamilar Tagavalaatruppadai website (www.tagavalaatruppadai.in) has been developed with 31,158 photographs of Tamils' history and culture. This repository is being continuously updated by adding more artefacts and monuments. So far, this website has been visited 27,71,565 times by the users.

#### 5.5 Creation of Virtual Reality Museum

An amount of Rs.7.5 crore has been sanctioned to create a Virtual Museum for Tamils' history and culture, of which Rs.1.5 crore has been allocated for the first year. An Expression of Interest (EoI) has been called for to create the virtual reality content namely Rajendra

Chola's Naval Voyages and Maritime Trade in Southeast Asia, Silapathikaram - Puharkandam - Festival for Indra.

## **6 Other Projects**

6.1. Celebrating 150<sup>th</sup> Birth Anniversary of "Kappalottiya Tamizhan" V.O. Chidambaranaar – [digitize and publish his books and manuscripts in the internet]

In Commemoration of 150<sup>th</sup> birth anniversary of 'Kappalottiya Tamizhan' V.O. Chidambaranar, digitization of his books, manuscripts and web enabling have been undertaken. So far, 127 books, manuscripts, photographs, documents and multimedia documents have been digitized and uploaded in a separate web page created exclusively for V.O.C. It was inaugurated by the Hon'ble Chief Minister of Tamil Nadu on 18.11.2022. (https://www.tamildigitallibrary.in/voc)

# 6.2 Documenting Ph.D Thesis Abstract, Synopsis and Glossaries of all Universities

The abstracts, synopsis and glossaries of 354 Ph.D thesis have been received from all the Universities functioning under Higher Education Department and other Departments as well. These contents are published in the digital library website and acknowledgment certificates are being issued.

# 7. Research and Development - Tamil Computing wing

# 7.1 Computational Linguistics

This Computational section is working for developing Annotated Tamil Corpus, Parallel Corpus (Tamil – English), Graph Database, Indexes and Concordances for Tamil literatures, Developing Computational Grammar, Tamil Computing tools like: Part of Speech (PoS)

tagger, Chunker and fonts development like: Tamil vattezhutthu, Unicode activities etc.

#### 7.2 Use case and tools development

The use cases for TVA lessons have been completed and digital library use cases are being written.

#### 7.3 Kani Tamil Peravai

Kani Tamil Peravai (KTP) is a programme envisaged by TVA to create awareness among students about Tamil Computing. In order to promote and motivate the college students, the field experts are encouraging them to write Tamil contents, app development, writing articles in Tamil etc. So far, 212 KTP centres have been started in Universities / Colleges across Tamil Nadu.

## 7.4 Developing Tamil Computing tools

As per the announcement made in the year 2022 – 23, the work orders for developing of computing tools have been issued. They are:

- Chatbot and Question & Answering System for Tamil
- 2. A Syntactic Parser for Tamil: A Data driven Approach
- 3. PoS and Semantic role of labelling
- 4. Developing a sentiment Analyzer Tool for Code Mixed Tamil Online Text
- 5. Real -time multi-dialect automatic speech recognition system for Tamil
- Multimodal Fused Tamil Hand written and Palm-leaf character recognition tool based on neural network
- 7. Hyphenation Support for Tamil typesetting

# 7.5 Hackathon on Tamil Computing

Tamil Virtual Academy in collaboration with Vellore Institute of Technology conducted a hackathon on Tamil Computing on 19.12.2022 to encourage the students. The prize winning projects are given below:

- 1. Identifying context based precedent rulings for a given case in Tamil.
- 2. Identifying name boards on the bus stop (Udhavi)
- 3. Sign language subtitle generator in Tamil.

### **CHAPTER-VII**

# **ICT ACADEMY OF TAMIL NADU (ICTACT)**

### 1. INTRODUCTION

Information and Communication Technology Academy of Tamil Nadu (ICTACT) is a not-for-profit Organization, started by the Government of Tamil Nadu in the year 2009, as a Public Private Partnership. The objective of ICTACT is to train the higher education teachers and students especially in Tier II and Tier III towns in various technology domains.

ICTACT follows a seven-pillar approach namely, faculty development, student skill development, entrepreneurship development, youth empowerment, research & publications, digital empowerment and industry-institute interaction. ICTACT is governed by an autonomous Board of Governors with representatives from the Government of

Tamil Nadu and the leading companies in the industry.

### 2. ACTIVITIES

The activities and achievements of ICTACT for the year 2022-23 are:

# 2.1 Faculty Development

4,700 faculty members have been trained through 137 faculty development programs in various ICT areas in the State.

# 2.2 Skill Development

ICTACT has trained and certified 68,772 graduating students from rural colleges in the State to improve their employability.

# 2.3 Entrepreneurship Development

Conducted entrepreneurship awareness seminars benefiting 33,968 students from 131 colleges across Tamil Nadu.

# 2.4 Youth Empowerment

- ➤ Organized "New India Learnathon 2022" activity for college students to inculcate the habit of self-learning and to make students learn foundations of trending technologies. 2,01,949 students participated and completed 1,68,727 online certifications through this initiative.
- Organized "Youth Talk 2022" as a part of Youth Leadership Summit 2022 for the students of Tamil Nadu. This initiative is envisioned to identify young, powerful communicators and leaders who can communicate their thoughts to inspire the youth and peers in their community. Youth Talk is conducted in 6 regions which include Chennai, Coimbatore, Salem, Kanyakumari, Madurai and Puducherry. Top 100 students were selected in Regional Pre Finale and Top 6 students were selected in Regional

Finale to participate in Grand finale. On this occasion, 15,119 students attended the event. The winners of the regional finale contested in the grand finale to exhibit their public speaking skills.

### 2.5 Research and Publications

ICTACT publishes 6 peer reviewed International Research Journals on quarterly basis. During the year 2022-23, 187 research papers were published. These are indexed in various international databases.

- ➤ ICTACT Journal on Communication Technology (IJCT)
- ➤ ICTACT Journal on Image and Video Processing (IJIVP)
- > ICTACT Journal on Soft Computing (IJSC)
- ➤ ICTACT Journal on Micro Electronics (IJME)
- > ICTACT Journal on Management Studies (IJMS)

ICTACT Journal on Data Science & Machine Learning (IJDSML)

## 2.6 Digital Empowerment

ICTACT is an assessment and certification agency for Pradhan Mantri Gramin Digital Saksharta Abhiyaan (PMGDISHA), a program of Government of India. 15,14,418 candidates have been assessed and certified for Digital Literacy during 2022-23.

# 2.7 Industry Institute Interaction

ICTACT has conducted the below conclaves with the support of leading corporate partners to give an awareness on the upcoming technologies and their importance in academia. 4,704 senior educators benefitted out of these events.

- 1. BRIDGE Kanyakumari, Chennai 2022, Chennai 2023
- 2. 5G Confluence 2022
- 3. Autodesk Thought Leadership Meet 2022

- 4. Symposium on Android Application development with Kotlin
- 5. Honeywell Digital Youth Empowerment Summit 2022
- 6. Infocomm India Summit 2022
- 7. UiPath Academic Leaders Roundtable
- 8. Service Now Partnership Launch
- 9. Oracle Member Hub Session
- 10. Honeywell Education Summit 2022

# 2.8 New Government Projects Implemented (2022-2023)

# NAAN MUDHALVAN – An Experiential Project Based Learning

Under the Naan Mudhalvan Initiative, the Tamil Nadu Skill Development Corporation (TNSDC) Government of Tamil Nadu had organized - An Experiential Project-Based Learning Program, with Anna University as the University Ecosystem Partner, IBM as the

Technology Partner, ICT Academy as the Support Partner and NASSCOM as the Skills Certification Partner.

IBM provided 50 industry problem statements for which students of engineering institutions-built solutions while they undergone 100 hours of project-based learning as an elective course with 3 academic credits.

The students worked in four groups, to complete projects using agile approaches with the aid of faculty and industry mentors.

NASSCOM issued the National Skills Certification to the students who successfully completed the program. ICT Academy, being the coordinating agency facilitated the faculty training and helped mobilization of students in the State of Tamil Nadu.

In total, **397** colleges enrolled, **30** workshops conducted, **428** Colleges onboarded, **616** SPoCs onboarded, **12,967** Projects submitted, **2,313** faculties from affiliated & autonomous institutions of Anna University and **54,421** students of the 6<sup>th</sup> Semester of CSE/IT & ECE streams benefitted from this initiative.

### Naan Mudhalvan - Kalluri Kanavu

Hon'ble Chief Minister of Tamil Nadu launched the Kalluri Kanavu (College Dreams) program under Naan Mudhalvan scheme which will offer higher-education guidance to students who have cleared Class 12, at Nehru Indoor Stadium. The program provided the students with detailed information about different courses, colleges, entrance examinations, educational loans and scholarships, etc.

ICT Academy supported this initiative with the wide network of Higher education institutions

across the State and ensured Naan Mudhalvan – Kalluri Kanavu program to be a resounding success.

The 4 consecutive days of the successful program covered all districts, 100+ speakers and 70,000+ students.

# 2.9 New Corporate Partners Signed for Content (2022-2023)

ICT Academy has signed MoU with Service Now and Tally which will help the students to build their skills on the emerging technologies.

# 2.10 New Corporate Partners Signed for Placement (2022-2023)

ICT Academy has signed MoU with Omega Health Care, Corro Health, Teach nook, Cirrus Labs, MMC Infotech Services, Magzter, Visionary RCM, Grootan Technologies, Lumina Datamatics, Equinity, Quess Corp, Trinity Skill Works, Focus Edumatics, Allsec Technologies, Bank zone, Renault, Olam Information, Rudram Technologies, Telecom sector, Vaken Technologies, Genpact, Win ways, Taj Solutions, Tranpac software and E2E hiring which will support the students on getting placements in good companies.

The Placement impact from April 2022 – January 2023 for students graduating in 2023.

No. of Companies - 287

No. of Drives conducted - 279

No. of Students Placed - 14,494

Average Salary: 2.4 Lakh per Annum

### 2.11 New Government Partners Signed

ICT Academy has signed MoU with Tamil Nadu Police Housing Corporation, Tamil Nadu Adi Dravidar Housing & Development Corporation, Naan Mudhalvan and TICEL Bio park which will help the students to build their skills on the emerging technologies.

# 2.12 CSR Projects being implemented in 2022-2023

ICT Academy has implemented new CSR projects with the leading corporate partners such as TACTV, ELCOT, Atos, Capgemini, Finastra, PayPal, Microsoft, Inspirisys Systems, Bajaj Finserv, Cisco, ITC Infotech, Cognizant, Honeywell, Lenovo, FedEx and R Systems. These projects benefitted students and teachers in Tamil Nadu through training on emerging technology skills, entrepreneurship skills and digital teaching skills.

S. No.	Name of the Project	Organization/ Department
1	Employability Skill Program for 1,750 unemployed youth & vulnerable section people	Tamil Nadu Arasu Cable TV Corporation
2	Faculty Development Program on IT &	Electronics Corporation of

	Soft Skill for 1300 College Faculties	Tamil Nadu
3	Women Transformation Program on advanced IT skills for 1,000 women students	Capgemini
4	Student Empowerment Program on advanced IT skills for 2,500 students	PayPal
5	Student Transformation Program on BFSI skills for 500 students	Finastra
6	Cybersecurity Training for 400 Educators & 2,500 Students of Higher Education	Microsoft

7	Tech4All Women Empowerment Program on advanced IT skills for 5000 women students	Cognizant
8	Honeywell Student Empowerment Program on advanced IT skills for 8,150 students	Honeywell
9	Aspire STEM Education Program on IT industry readiness for 400 students	ITC Infotech
10	Employability Skill Training on Retail skills for 4,000 students	Bajaj Finserv
11	Advanced IT Skill Training for 350 students	Inspirisys

12	Student Empowerment Program on advanced IT skills for 382 students	Lenovo
13	Centre for Women Empowerment Program on advanced IT skills for 432 students	FedEx
14	Vocational Training on Cybersecurity for 5012 students	Cisco
15	Training 2768 students on IT, BFSI and KPO skills	Atos

Total Beneficiaries Impacted through CSR initiatives: **35,144** 

# 2.13 Proposed projects for the year (2023-2024)

S. No.	Name of the Project	Organization/ Department
1	Program on Retail, IT, ITeS, BFSI & Telecom for 6000 students of Prefinal and final year students of engineering, arts & science institutions (govt. & selffinancing institutions of SC/ST/SCA Community	Tamil Nadu Adi Dravidar Housing & Development Corporation (TAHDCO)
2	State Planning Commission - TANII - Project Based Learning	State Planning Commission - TANII

	Program for 500 faculty members & 10,000 students	
3	CoE to train and certify 35,000 citizens in 5 years including professionals, Government Officials, faculty members and students on emerging technologies	ICT Academy of Tamil Nadu
4	Skill development program under CSR initiative	Finastra, R systems, Tamil Nadu Police Housing Corporation, Honeywell, Atos, Bajaj FinServ and CPCL

5	Centre	of	TICEL Bio Park
	Excellence	in	
	Skilling	and	
	research for	the	
	students ac	ross	
	Tamil Nadu		

# **Proposed Plan for Placement:**

No. of placement Job Fairs: 24

No. of Placements targeted: **5,000 students** 

No. of placement drives: 200

No. of Placements targeted: **20,000 students** 

No. of Partnership: 200 organization

Custom Specific - Through Hire - Train-Deploy

model: 2,000 students

Industry on Campus: **500 – 1000 students** 

# T. MANO THANGARAJ Minister for Information Technology and Digital Services



Umagine 2023 -Inagural event held at Chennai on 23rd March, 2023 on 14.03.2022



Valedictory Session of Umagine 2023 held at Chennai on 25th March, 2023



2nd Day Event of Umagine 2023



Proposed ELCOT Tower - ELCOSEZ Sholinganallur



Proposed IT Park at Vilankurichi, Coimbatore



IT Park at Hosur

iv



IT Park at Ilandhaikulam, Madurai



 $ELCOT\ IT\ Building, Jagiram mapalayam, Salem$ 



ELCOT IT Building, Gangaikondan, Tirunelveli



ELCOT IT Building, Navalpattu, Tiruchirappalli

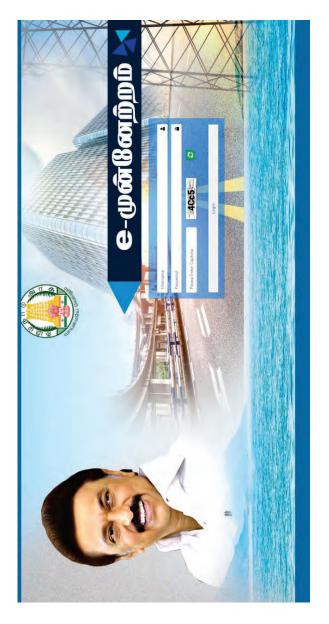


ELCOT IT Building, Vadapalanji, Madurai



 $Implementation \ of \ BharatNet$ 

# e-Munnetram



# e-Office



# e-Paarvai



# Pudhumai Penn Scheme



# Pudhumai Penn Scheme

Ramamirtham Ammaiyar Higher Education Assurance Scheme to enhance the enrolment ratio of girls from Through this scheme, the financial assistance of Rs. 1000/month will be provided to the girls till their recognized course. The incentive amount under this scheme will be disbursed directly into the student's The Government of TamilNadu has launched Moovalur Government schools to Higher Education Institutions. completion of UG degree/Diploma/ITI/any other Bank Account.

# Login







Social Welfare Department

Registrations are closed.



Review of District Managers and Signal Distributors of TACTV by Hon'ble Minister (IT & DS)



Signing of MSA for BharatNet Project Package B on 27.05.2022



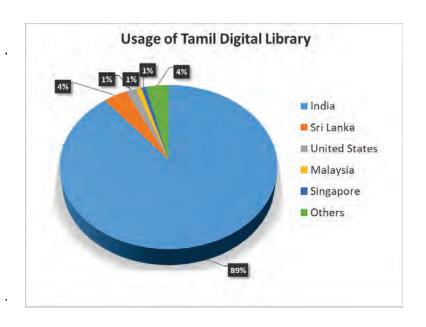
The Academic Programmes are provided through 135 contact centres in 27 Countries.

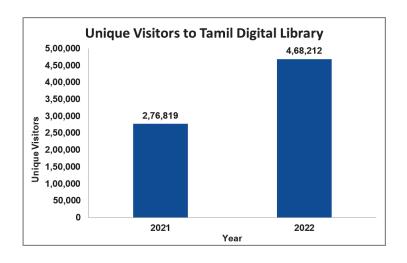


Digital Library



Thirukkural Dance Drama under "Theera Kaadhal Thirukkural"







Celebrating 150th Birth Anniversary of "Kappalottiya Tamilan" V.O. Chidambaranaar



Thiru M.K.Stalin, Hon'ble Chief Minister of Tamil Nadu inaugurated the 50th edition of ICT Academy of Tamil Nadu (ICTACT) BRIDGE conference on 14.03.2023 at Chennai Trade Centre.