



INFORMATION TECHNOLOGY DEPARTMENT

POLICY NOTE 2021-2022

DEMAND No. 31

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Minister for Information Technology

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**Government of Tamil Nadu
2021**

**INFORMATION TECHNOLOGY
DEPARTMENT**

DEMAND No. – 31

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CHAPTER-I

1. INTRODUCTION

Tamil Nadu is rapidly emerging as a power to reckon with in software industry. It is already a leader in Software as a Service (SaaS) and software exports due to its inherent advantages. These include, a vibrant academic eco-system, excellent technical manpower, strategic location, robust connectivity, besides a thriving manufacturing eco-system. Large pool of skilled manpower with lower attrition rates coupled with cost advantage drive its competitive edge. The process of digitization of economy and adoption of digital transactions has rapidly increased due to constraints on physical movements on account of COVID-19. These developments present host of opportunities for the state.

இலகு சீருடை நாற்றிசை நாடுகள்

யாவுஞ் சென்று புதுமை கொணர்ந்து இங்கே

திலக வாணுதலார் தங்கள் பாரததேசம் ஓங்க

உழைத்திடல் வேண்டுமாம்.

- மகாகவி பாரதியார்

It means "to bring innovation from countries in all four directions and work for the growth of the Nation."

Bharathiyar said this addressing women, but this holds true even otherwise as we need to conquer Emerging and Deep Technologies for creating growth and jobs. These include Artificial Intelligence (AI), Data Analytics, Natural Language Processing (NLP), Augmented Reality (AR)/Virtual Reality (VR), Drone Technology, Blockchain, 5G/6G Networks, Cyber Security, Quantum Computing, Autonomous Vehicles, Cryptography, Internet of Things (IoT)

amongst others. These technologies will form the basis of the growth of nation states in the next decade, impart strategic advantage, and create economic wealth and jobs.

The Government has already established a center of excellence focusing on Artificial Intelligence, Blockchain, Data Analytics and IoT. This is helping the Government to adopt the technologies in various verticals such as Healthcare, Agriculture and Education. **e-Paarvai**, an AI based cataract detection tool on mobile, has recently won an award from NASSCOM for its scalability. **NambikkaiInaiyam**, a Blockchain based platform, is being developed for the state to provide an immutable and verifiable information platform for critical Government applications.

As Tamil Nadu economy matures further, the services sector will also grow rapidly driven by proliferation of new products and services. This will primarily be enabled by Information Technology. Simultaneously, entrepreneurial eco-system in Tamil Nadu is also growing rapidly across sectors such as Healthcare, Tourism, Education, Engineering, Communications, Transportation, Banking and FinTech through innovations, again enabled by Information Technology.

The state is taking efforts to kick-start the entrepreneurial activity focusing on Emerging Technologies. This will promote a socially inclusive and broad-based growth and help us achieve leadership position in the ICT industry in the country. Tamil Nadu is a rich source of talented human capital. Global Capability Centres (GCCs) that thrive

on human capital also present a great opportunity for Tamil Nadu to improve its strategic capability and move up the value chain. Our state is well poised to capture these opportunities and IT department shall take all efforts to attract these companies to Tamil Nadu.

The state is improving the digital infrastructure through promotion of Data Centres and digital connectivity to the last mile. Chennai is emerging as a Data Centre Hub, thanks to its locational advantage, excellent connectivity, stable and surplus power. The prestigious BharatNet project will connect all 12,525 village panchayats of the state with a minimum of 1 Gbps high-speed bandwidth using Optical Fibre Cable (OFC) and provide triple play services to rural areas at affordable cost.

Tamil Nadu has been a trendsetter in Good Governance. Information Technology is enabling Government to listen to its citizens and respond to their needs. Integrated and Inclusive Public Grievance CM Helpline Management System (IIPGCMS) enables citizens to register their petitions through multiple channels. It has also helped in resolving the grievances received under the “Ungal Thoguthiyil Muthalamaichar (UTM)” scheme.

Tamil Nadu aims to transform governance to provide paperless, contactless and transparent services to its citizens. The eventual aim is to bring a paradigm change from focus on achieving “Outputs” to “Outcomes” and move from “Reactive” to “Proactive” Governance.

Technology is merely a means to an end. Tamil Nadu will deploy Information Technology to make the lives of citizens better by providing SMART (Swift, Monitorable, Accessible, Responsive and Transparent) governance. The growth in IT investments will propel economic growth and prosperity.

CHAPTER-II

ELECTRONICS CORPORATION OF TAMIL NADU LIMITED (ELCOT)

1. INTRODUCTION

Electronics Corporation of Tamil Nadu (ELCOT) Ltd., registered under Companies Act, 1956 on 21.03.1977, is a wholly owned Public Sector Undertaking of the Government of Tamil Nadu constituted with the objective of promoting electronics in the state. It has also played a pioneering role in the development of electronics sector, IT/ITeS products / services and IT-Infrastructure in the state.

2. ACTIVITIES

2.1 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 Service (ITeS) companies. This has led to investments in its IT parks and sustained creation of the Information Technology infrastructure. This has accelerated the growth of IT and ITeS sector in Tamil Nadu and this in turn had led to creation of enormous employment opportunities in Tamil Nadu.

ELCOT has a critical role in IT Investment promotion, IT infrastructure creation and skill development. ELCOT has contributed to the development of IT sector in several ways. Its activities include:

- Creation of 8 IT Special Economic Zones (SEZs) in Chennai and in Tier-II Cities of the state viz., Coimbatore, Madurai, Tiruchirappalli, Salem, Tirunelveli and Hosur.

- Creation of ELCOSEZs in 1588.16 acres of land (1321.61 acres in SEZ and 266.55 acres in non-SEZ space) at an investment of Rs.745 crore.

ELCOSEZs have enabled local firms to integrate with global value chains and have made significant contribution to the overall growth of exports, investment and employment generation in IT/ITeS sector in the state. IT/ITeS exports from ELCOSEZs are estimated for the year 2020-21 at Rs.23,590 crore and have generated direct employment for approximately 90,000 persons. ELCOT will also continue to strive to promote electronic manufacturing through EMC 2.0 (Electronics Manufacturing Clusters) scheme.

- Promotional activities of Tamil Nadu as the best investment destination for IT/ITeS:
 - Electronics Industries Association of India (ELCINA) Source India – Electronics Supply Chain event held during 9th to 10th September 2020.
 - Global “Yaathum Oorae” Conclave-cum-Expo held during 29th to 31st October 2020.
 - TiE Global Summit – conference and exhibition virtually conducted on 2nd and 3rd September 2020 at USA.
 - TiE Global Summit – Entrepreneurship 360° held during 8th to 10th December 2020.
 - CII Connect series held at Chennai from 15th to 19th September 2020, at

Hosur on 18th December 2020 and at Tirunelveli on 22nd December 2020.

- National FinTech Event – FinTERACT held during 27th to 29th January 2021.
- Indo-French Investment Conclave Tamil Nadu -3rd edition organized by Indo-French Chamber of Commerce and Industry (IFCCI) held during 11th to 12th February 2021.
- Certification Authority under the ICT Policy 2018 for the purpose of development of IT parks and for availing extra FSI from the CMDA/DTCP.
- Follow up of investments that were brought to Tamil Nadu in the Global Investors Meet (GIM).

2.2 ELCOT Special Economic Zones (ELCOSEZs)

2.2.1 ELCOSEZ- Sholinganallur, Chennai

In Sholinganallur, Chennai, it has established an ELCOSEZ in an extent of 377.08 acres at an investment of Rs.228 crore. It has created necessary common infrastructure and an administrative building measuring 6,358 sq.ft.

In this ELCOSEZ, land has been leased to the following companies:

S. No.	Company	Land (in acres)
1	Wipro Ltd.	80
2	HCL Pvt. Ltd.	50
3	Tech Mahindra Pvt. Ltd.	50
4	Ford Motors Pvt. Ltd.	28
5	Cognizant Technology Solutions Pvt. Ltd.	20

6	Sutherland Global Services Ltd.	15
7	Tamil Nadu Electricity Board	16

These companies have established facilities in a built-up space of 109.31 lakh sq.ft and have created employment for approximately 67,000 persons. The private companies above are in Software Development, Maintenance and Testing, Consulting and Business Process Outsourcing.

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 in progress.

2.2.2 ELCOSEZ- Vilankurichi, Coimbatore

In Coimbatore at Vilankurichi, it has established an ELCOSEZ in 62 acres of land at an investment of Rs.167 crore. ELCOT has created necessary common infrastructure and constructed an administrative building measuring 3,524 sq.ft.

In this ELCOSEZ, land has been leased to the following companies:

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

These Companies have created their facilities by constructing 23 lakh sq.ft IT building and provided employment for 13,200 persons.

The construction of 2.66 lakh sq.ft Information Technology Tower at an estimated cost of Rs.114.16 crore is under progress.

2.2.3 ELCOSEZ - Ilandhaikulam, Madurai

In Madurai at Ilandhaikulam, it has established an ELCOSEZ in 28.91 acres of land at an investment of Rs.34 crore. ELCOT has created necessary common infrastructure and has constructed an administrative-cum-IT building measuring 60,205 sq.ft.

In this ELCOSEZ, land has been leased to the following companies:

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

2	HCL Info System Ltd.	6.75
3	Chella Software Pvt. Ltd.	2.25
4	Tamil Nadu Electricity Board	0.58

In addition, 6000 sq.ft land has been leased to Rebar Design & Detail Pvt. Ltd.

These private companies have created their facilities 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	AMBC Technologies Pvt. Ltd.	3,277

3	Sai BPO Services Ltd.	15,181
4	Neeyamo Enterprises Solutions Private Ltd.	30,103
5	CVIAC Consulting	9,136

These companies are into consulting, application development, business process outsourcing and digitization of data and are providing employment to around 7,200 employees.

2.2.4 ELCOSEZ – Vadapalanji, Madurai

In Madurai at Vadapalanji, ELCOT has established an ELCOSEZ in 245.17 acres of land at an investment of Rs.70 crore. It has completed the common infrastructure in this ELCOSEZ, including a road over bridge. It has also constructed an administrative-cum-IT building measuring 70,139 sq.ft.

In this ELCOSEZ, it has leased land to the following companies:

S.No	Company	Land (in acres)
1	HCL	60
2	Chain-sys Software Exports Pvt. Ltd.	20
3	Pinnacle Infotech Solutions.	10

In the IT Building, 59,166 sq.ft space has been allotted to the following companies:

S. No.	Company	Space (in sq.ft.)
1	Neeeyamo Enterprise Solutions Pvt. Ltd	46,968
2	Neeeyamo Works Technologies Pvt. Ltd	11,543
3	Chain-sys Software Exports Pvt. Ltd.	655

These companies are into consulting, payroll processing and digitization of data.

2.2.5 ELCOSEZ - Navalpattu, Tiruchirappalli

In Tiruchirappalli at Navalpattu, it has established an ELCOSEZ in 147.61 acres with SEZ area of 123.23 acres at an investment of Rs.60 crore. It has created necessary common infrastructure and has constructed an administrative-cum-IT building measuring 59,960 sq.ft.

In this ELCOSEZ, 2 acres of land has been allotted to iLink Multitech Solutions Pvt. Ltd.

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

S. No	Company	Space (in sq.ft)
1	iLink Systems Pvt. Ltd.	6,668
2	Scientific Publishing Company	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 1390 employees. The IT space has been fully allotted.

The construction of 1.16 lakh sq.ft IT Tower is in progress at an estimated cost of Rs.48.10 crore.

2.2.6 ELCOSEZ- Gangaikondan, Tirunelveli

In Tirunelveli at Gangaikondan, ELCOT has established an ELCOSEZ in 500 acres of land with an extent of SEZ of 290 acres at an investment of Rs.55 crore.

ELCOT has created necessary common infrastructure and has constructed an administrative-cum-IT building measuring 56,720 sq.ft. In the IT building, 5,994 sq.ft space is allotted to Caliber Interconnect Solutions Pvt. Ltd.

In this ELCOSEZ, 100 acres of land has been allotted to Syntel International Pvt. Ltd. It has constructed 2.60 lakh sq.ft

IT building and is operating with around 200 employees and providing software services.

2.2.7 ELCOSEZ - Jagirammalayam, Salem

In Salem at Jagirammalayam, ELCOT has established an ELCOSEZ at a total extent of 53.33 acres at an investment of Rs.44 crore.

It has created necessary common infrastructure and has constructed an administrative-cum-IT building measuring 62,174 sq.ft.

In this ELCOSEZ, 27.87 acres of land has been leased to the following companies:

S. No.	Company	Land (in acres)
1	Mahima Technologies Pvt. Ltd.	3
2	Vee Technologies	9.49

3	TANTRANSCO Ltd.	7.88
4	e-Mudhra Ltd.	2.5
5	Anmol Technologies Pvt. Ltd.	1
6	FocusR Consultancy and Technologies Pvt. Ltd.	1
7	Nuratech Consultancy Services Pvt. Ltd.	3

In the ELCOT IT building, 37,958 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 LLP	1,000

5	Knowledge Lens Pvt. Ltd.	1,000
6	StinSoft Technologies Pvt. Ltd.	989
7	Vee Technologies Pvt. Ltd.	10,562
8	Vee Imaging Solutions Pvt. Ltd.	10,562
9	Mahima Technology Pvt. Ltd.	3,448

These companies are operating with approximately 614 employees.

2.2.8 ELCOSEZ-Viswanathapuram, Hosur

In Viswanathapuram at Hosur, an ELCOSEZ has been established in 174.47 acres of land at an investment of Rs.85 crore.

ELCOT has created necessary common infrastructure and has constructed an

administrative-cum-IT building measuring 62,100 sq.ft.

In the IT building, 44,589 sq.ft space has been allotted to the following companies:

S. No	Company	Space (in sq.ft.)
1	US Technology International Pvt. Ltd.	21,100
2	Chandusoft Technologies Pvt. Ltd.	10,550
3	Thendral Infotech	2,989
4	Eminentlabs Software Pvt. Ltd.	9,950

2.3 Start-up Warehouse

ELCOT along with NASSCOM as its knowledge partner has established a Start-up Warehouse in 6,860 sq.ft with a capacity of 90 seats at TIDEL Park Ltd.,

Chennai at a cost of Rs.3.53 crore. So far, 44 Start-ups have been incubated successfully.

2.4 FinBlue - Centre of Excellence (CoE) in FinTech

A Centre of Excellence (CoE) in FinTech called “FinBlue” has been set up at Software Technology Parks of India (STPI), Chennai with state Government’s contribution of Rs.5.75 crore. Necessary support, mentoring and guidance are being provided to the Start-ups. FinBlue is acting as the nucleus of FinTech activity in Tamil Nadu by collaborating with national and international FinTech regulatory organizations and will promote investments into the state through initiatives at FinBlue.

2.5 IT-Infrastructure

ELCOT is maintaining the state IT infrastructure services, which is the

backbone for providing e-Governance services to the citizens and connectivity to the Government departments.

2.5.1 Connectivity Services

2.5.1.1 Tamil Nadu State Wide Area Network (TNSWAN)

It is a scheme jointly started by the central and state Governments under the National e-Governance Plan (NeGP).

TNSWAN commenced its operations with 708 Points of Presence (PoPs) that have now increased to 829 PoPs. TNSWAN enables state Government departments to access their applications, services and servers hosted in TNSDC in a secure manner. It is being used by 3000+ offices of various departments of the Government of Tamil Nadu.

TNSWAN provides voice, data and video connectivity to all Government departments, enables efficient workflow in Government and enables delivery of services to the citizens.

National Knowledge Network (NKN) has been integrated with TNSWAN at district PoPs as per the guidelines of Ministry of Electronics and Information Technology (MeitY), Government of India.

2.5.1.1.1 TNSWAN Phase-2 Extension

Government of Tamil Nadu has accorded approval to extend TNSWAN Phase-2 operations for a period of 3 years up to February 2022.

2.5.1.2 Other Connectivity Services

2.5.1.2.1 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 60 offices of Tamil Nadu Government departments.

2.5.1.2.2 Internet Leased Line Connectivity

Internet Leased Line connectivity is being provided to 248 Government offices on a dedicated basis.

2.5.1.2.3 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 273 Government offices.

2.5.2 Hosting and Allied Services

Tamil Nadu State Data Centre (TNSDC) is a critical infrastructure that enables delivery of secure e-services. State Government departments and their agencies can host their data, applications, services and servers on a common, redundant, secured and controlled infrastructure providing ease of operation, integration and efficiency.

2.5.2.1 Tamil Nadu State Data Centre-1 (TNSDC-1)

Government of Tamil Nadu has implemented the first ISO certified State Data Centre (TNSDC-1) in the country and is operational from the year 2011 with a capacity of about 65 racks at a budget of Rs.138 crore for a period of 12 years.

2.5.2.2 Tamil Nadu State Data Centre-2 (TNSDC-2)

As TNSDC-1 has been almost completely utilized, TNSDC-2, the second phase of TNSDC was established and it is operational from the year 2020 at a budget of Rs.74.7 crore. The Data Centre can accommodate 195 Racks. Its modular design supports seamless scale up.

More than 231 applications/services are currently hosted in TNSDC-1 and TNSDC-2.

2.5.2.3 Tamil Nadu Disaster Recovery Centre (TNDRC)

Disaster Recovery Centre (TNDRC) has been established at ELCOSEZ, Tiruchirappalli and is 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.

2.5.2.4 Thamizh Megam - TN Cloud Computing Services

The state cloud infrastructure, trade marked as “Thamizh Megam”, enables optimal sharing of system resources, with minimal management. It is operational from 2016 at a cost of Rs.13.88 crore for a period of 5 years.

At Thamizh Megam, Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) are being offered and 116 applications/services are being hosted.

Enhancement of cloud infrastructure and extension of Disaster Recovery facility is being implemented at a budget of Rs.9.98 crore.

2.5.3 e-Security

2.5.3.1 Security Architecture for TNSDC

To ensure data protection for Government applications / services, following high level Security Architecture Framework has been put in place.

1. Security Information and Event Management (SIEM) tool.
2. Vulnerability Assessment & Penetration Testing (VAPT).

These help in preventing cyber attacks and take mitigation measures in case of attacks.

2.5.3.2 Cyber Security Architecture for Tamil Nadu (CSA-TN)

Cyber Security Architecture for Tamil Nadu (CSA-TN) has been established to counter cyber-attacks in collaboration with

Centre for Development of Advanced Computing (C-DAC), Chennai at a cost of Rs.21.39 crore for a period of 3 years.

2.6 Open Government Data

The Open Government Data (OGD) portal of Tamil Nadu publishes open data of Government departments, organizations and public sector undertakings for the use of public at large.

The state instance for OGD, Tamil Nadu has been created and is operational at <https://data.tn.gov.in/>. Currently, 31,585 different datasets pertaining to 64 Government departments/agencies have been published at the portal.

2.7 Aadhaar Permanent Enrolment Centres (PECs)

ELCOT is an empanelled agency of the Unique Identification Authority of India

(UIDAI) to carryout Aadhaar enrolment activities in the state. It has established 227 PECs at 32 District Collectorates, 11 Municipal Corporation Headquarters, 45 Municipal Zonal Offices, 124 Municipalities, 2 Revenue Divisional Offices, 5 Town Panchayats, 4 Block Development Offices and 4 Provident Fund Offices.

The cumulative transactions at Permanent Enrolment Centres (PECs) as on 31.08.2021 are 67,52,011.

2.8 Capacity Building

ELCOT plays an important role in meeting the IT training needs of Government departments. Training infrastructure facilities have been created at ELCOT, Perungudi, Chennai and in 12 Districts.

The training focuses on IT literacy, developing requisite knowledge and skills for

rolling out of e-Governance projects. So far, 1,21,378 participants from various Government departments across the state have benefited.

2.9 Network Services

ELCOT also

- Facilitates events through video conferencing for various departments.
- Provides specialized network equipment during the visit of VVIPs.
- Supplies and commissions video conferencing system, public address system, video walls, IVRS.
- Maintains Secretariat Network (SECNET) 24x7.

2.10 Procurement Services

ELCOT is an optional procurement agency for electronic hardware / software products for all the Government departments/public sector undertakings/ autonomous bodies.

ELCOT procures and supplies quality electronic products to the departments. Even during the COVID-19 Pandemic, ELCOT has rendered procurement services to the Government departments, particularly to the Health and Family Welfare Department and Police Department for their urgent needs.

The original equipment manufacturers of desktop, laptop, printer and multifunction devices have been responsive to ELCOT's tenders and offer competitive prices in view of the large volumes in the rate contract tenders. This has resulted in substantial cost

savings compared with the market value of the products.

During the year 2020-21, ELCOT procured IT products for a value of Rs.245.15 crore and has a projected procurement of Rs.300 crore for the year 2021-22.

CHAPTER-III

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

1. INTRODUCTION

The Directorate of e-Governance was created in 2006 and Tamil Nadu e-Governance Agency (TNeGA) was created as an autonomous Society registered under the Tamil Nadu Societies Registration Act, 1975 to implement the National e-Governance Plan (NeGP).

2. OBJECTIVES

- i) To provide quality ICT services and promote innovation in emerging technologies.
- ii) To help create a state wide strategic architecture for e-Governance.

- iii) To support change management in digital transformation projects.
- iv) To improve competitiveness of the state and make the state future ready.
- v) To provide benefits of Information Technology to the citizens, firms and the Government.
- vi) To set standards for data, interoperability and security.
- vii) To create an ecosystem of academic institutions, research organizations, start-ups, funding agencies and eminent individuals.
- viii) To support capacity building of Government employees in Information Technology.

3. TECHNICAL UNITS

3.1 Information Technology (IT) Cadre

An IT Cadre has been created to meet the IT needs of Government departments for implementing e-Governance projects.

3.2 State e-Mission Team (SeMT)

The State e-Mission Team (SeMT) funded by Ministry of Electronics and Information Technology (MeitY) enhances the internal professional capacity, supports in programme management, technology, enterprise architecture and in change management.

3.3 Centre of Excellence for Emerging Technologies (CEET)

Government of Tamil Nadu has established a Centre of Excellence for Emerging Technologies (CEET) to promote

and build competence in Emerging Technologies such as Artificial Intelligence, Blockchain, Data Analytics and IoT and adopt these technologies in various Government verticals such as Healthcare, Agriculture and Education to improve governance and offer enhanced services to citizens.

CEET acts as a catalyst for diffusion of innovation in various ways:

- i) Finds low-cost scalable solutions to Government departments.
- ii) Establishes and fosters partnership with Government departments, agencies, corporate entities, industry bodies and academic institutions working in Emerging Technologies.
- iii) Defines and promotes best practices and standards followed across the globe in Emerging Technologies.

- iv) Engages in capacity building, training and orientation of Government officers at various levels.
- v) Reaches out to other organizations offering similar, complementary or supplementary technologies.
- vi) Organizes development programmes, training courses, conferences, seminars, guest lectures and other related activities.
- vii) Conducts research and produce working papers, industry papers for publishing in peer reviewed journals and in conferences.
- viii) Takes up specific prototype or development tasks in Emerging Technologies based on the needs of Government departments.

- ix) Evolves reuse software strategies for asset creation and consumption by Government departments.

3.4 District e-Governance Societies (DeGS)

District e-Governance Societies have been created for providing overall guidance to e-Governance projects at the district level. They are headed by the respective District Collectors (except in Chennai, where the Commissioner, Greater Chennai Corporation is its head). DeGS gets a 5% revenue share from the e-Sevai operations.

4. DATA DRIVEN GOVERNANCE

4.1 Chief Minister's Decision Support System

To monitor implementation of schemes effectively, Chief Minister's Decision Support System is being designed to provide data centric governance. It would display key

performance indicators of various Department schemes/programs to help in decision-making at strategic level. The decision support system for departments would utilize data at a much more granular level and deploy comprehensive data analytics to monitor, detect and solve bottlenecks to improve efficacy of department.

4.2 State Family Database (SFDB)

Information Technology Department is creating the State Family Database (SFDB) at a cost of Rs.47.5 crore.

State Family Database (SFDB) is envisioned as a Data-Driven Decision Support Infrastructure for improving Governance. It will enable a single source of truth for all beneficiaries of Government schemes. It will complement the existing

Department infrastructure by enabling data harmonization and synchronization among various departments. It would also help in seamless delivery of Government benefits and services to citizens and would improve inclusiveness of Government schemes.

4.3 Tamil Nadu Geographical Information System (TNGIS)

Tamil Nadu State Spatial Data Infrastructure (TNSSDI) and its TNGIS portal (www.tngis.tn.gov.in) is a one-stop source for all geospatial data for the state of Tamil Nadu.

29 stakeholder departments and agencies are already part of this project and 358 layers of GIS information of various departments have already been hosted.

A modern Web-GIS framework is being developed with reusable components for future use.

5. SUSTAINABLE DEVELOPMENT GOALS (SDGs)

Sustainable Development Goals (SDGs) are a collection of 17 interlinked goals designed to achieve a 'better and more sustainable future for all'.

An application has been developed by TNeGA to capture the targets and associated data of Sustainable Development Goals of all departments.

Table 1: SDG achievements related to the Information Technology Department

S. No	Indicators	2020- 21 achievements
1	16.6.1: No. of Government services provided online to citizens	130
2	16.6.1a: No. of departments / agencies integrated for Mobile governance	27
3	16.6.1b: No. of e-Transactions on e-Taal	41.3 crore
4	16.6.1c: No. of operational Common Service Centres	10,818

6. GOVERNMENT TO CITIZEN (G2C) SERVICES

6.1 Common Service Centres (CSCs)

Tamil Nadu e-Governance Agency (TNeGA) provides electronic services to

public through Common Service Centres and through Open Citizen Portal (<https://www.tnesevai.tn.gov.in/Citizen/PortalLogin.aspx>). The e-Sevai Centres are run by Tamil Nadu Arasu Cable TV Corporation Ltd. (TACTV), Primary Agricultural Co-operative Credit Societies (PACCS), Village Poverty Reduction Committees (VPRCs), Magalir Thittam of Tamil Nadu Corporation for Development of Women, Fisheries Department, Village Level Entrepreneurs (VLEs) and Cantonment Board with an aim to deliver Government services to the citizens near their homes.

As on 31.08.2021, there are 10,818 Common Service Centres operating in Tamil Nadu under different agencies.

Table 2: List of agencies that run CSC

S. No	Agencies	No. of Centres
1	Primary Agricultural Cooperative Credit Societies (PACCS)	4,225
2	Tamil Nadu Arasu Cable TV Corporation Ltd. (TACTV)	580
3	TACTV Franchise	1,553
4	Magalir Thittam - Tamil Nadu Corporation for Development of Women	2,386
5	Fisheries Department	153
6	Cantonment Board	3
7	Village Level Entrepreneurs (VLEs)	1,918
TOTAL		10,818

Table 3: List of 130 Services offered through Arasu e-Sevai Centres

Department	Services Name
Revenue and Disaster Management Department (No. of services – 40)	Income Certificate
	Nativity Certificate
	Residence Certificate
	Community Certificate
	First Graduate Certificate
	Deserted Woman Certificate
	Income and Asset certificate to Economically Weaker Section
	Family Migration Certificate
	Unemployment Certificate
	Widow Certificate
	Agricultural Income Certificate
Certificate for Loss of educational records due to disasters	

	No Male Child Certificate
	Unmarried Certificate
	Inter-caste Marriage Certificate
	Legal Heir Certificate
	Solvency Certificate
	License under Pawn Broker's Act
	Money Lender's license
	Other Backward classes (OBC) Certificate
	Small/Marginal Farmer Certificate
	e-Adangal
	Temporary Cracker license
	Issuance of Jain Minority Certificate
	Public Building license
	Destitute Widow Certificate

	Indira Gandhi National Old Age Pension Scheme
	Indira Gandhi National Widow Pension Scheme
	Indira Gandhi National Differently Abled Pension Scheme
	Differently abled Pension Scheme
	Destitute Deserted Women Pension Scheme
	Unmarried Women Pension Scheme
	Destitute Widow Pension Scheme
	Chief Minister's Uzhavar Paathukappu Thittam
	Grievance Day Petition
	Tamil Nilam - Full Field Patta Transfer

	Tamil Nilam – Joint Patta Transfer
	Tamil Nilam – Sub-division Patta Transfer
	Tamil Nilam – Extract of A-Register
	Tamil Nilam – Extract of Chitta
Social Welfare and Women Empowerment	Annai Terasa Ninaivu Orphan Girl Marriage Assistance Scheme
	Chief Minister’s Girl Child Protection Scheme-I
	Chief Minister’s Girl Child Protection Scheme – II
	Dr. Dharmambal Ninaivu Widow Re-Marriage Assistance Scheme

Department (No. of services 7)	Dr. Muthulakshmi Reddy Ninaivu Intercaste Marriage Assistance Scheme
	EVR Maniammaiyyar Ninaivu Widow Daughter Marriage Assistance Scheme
	Moovalur Ramamirtham Ammaiyyar Ninaivu Marriage Assistance Scheme
Police Department (No. of services – 9)	CSR Status
	FIR Status
	Online Complaint Registration
	Status viewing
	Vehicle Search

	View FIR
	Download Accident Case Document
	Police Verification Service
	Lost Document Report
Tamil Nadu Waqf Board (No. of service -1)	Ulema Pension Scheme
Health and Family Welfare Department (No. of service – 1)	Pre-Registration of Pregnancy (PICME)
Directorate of Boilers (No. of services – 5)	Registration of license under Boilers Act
	Renewal of license under Boilers Act
	Application for Approval of Manufacture/Erector of Boilers

	Application for Renewal of Manufacture / Erector of Boilers
	Steam Test for Boilers
Commissionerate of Municipal Administration (No. of services – 5)	Collection of Non-Tax
	Collection of Professional Tax
	Collection of Property Tax
	Collection of Underground Drainage Charge
	Collection of Water Charges
Chennai Metropolitan Water Supply and Sewerage Board (No. of service – 1)	Water and Sewerage Tax

Greater Chennai Corporation (No. of services – 6)	Printing of Birth Certificate
	Printing of Death Certificate
	Renewal of Trade license
	Collection of Company Tax
	Collection of Professional Tax
	Collection of Property Tax
Directorate of Fire & Rescue Services (No. of services – 5)	NOC for MSB compliance
	NOC for MSB Planning Permission
	NOC for Non-MSB Planning Permission
	MSB Fire license Registration and Renewal

	Non-MSB Fire license Registration and renewal
Tamil Nadu Generation and Distribution Corporation Ltd. (TANGEDCO) (No. of services – 3)	Electricity bill payment
	Registration of new LT connection
	Payment for new LT connection
Directorate of Employment & Training (No. of services – 4)	Printing of Registration ID
	Application for renewal of registration
	Application for profile updatation
	Application for registration
Directorate of Drug Control	Application for grant/renewal of license

(No. of services - 18)	for sale of allopathic drugs
	Application for grant/renewal of license for sale of homeopathic medicines
	Application for grant/renewal of license for sale of restricted allopathic drugs
	Application for grant/renewal of license for sale of Schedule X drugs
	Application for issue of duplicate License for sales
	Grant / Renewal of license for manufacture of Drugs for Allopathy

	Approval of additional categories of products
	Grant of Test license
	Change of Technical Person
	Grant/Renewal of loan license for manufacture of drugs – Allopathy
	Grant/Renewal of repackaging license for allopathic drugs
	Grant/Renewal of license for manufacture of drugs – Homeopathy
	Retention of license for sale of Allopathic Drugs
	Retention of license for sale of Restricted allopathic drugs

	Retention of license for sale of Schedule X drugs
	Retention of license for Manufacture of Allopathic Drugs
	Retention of Loan License for Manufacture of Allopathic Drugs
	Retention of License for Repackaging of Allopathic Drugs
Energy Department (No. of services -2)	Issuance of drawing approval
	Issuance of safety certificate
Greater Chennai Traffic Police (GCTP) (No. of service - 1)	e-challan payment

Fisheries and Fishermen Welfare (No. of service – 6)	Relief assistance to marine fishermen families during fishing ban period
	Special allowance to marine fishermen families during fishing lean period
	National fishermen savings cum Relief scheme
	National Fisherwomen Savings cum Relief Scheme
	Renewal of relief assistance to marine fishermen families during ban period
	Renewal of special allowance to marine

	fishermen during fishing lean Period
Welfare of Differently Abled Persons Department (No. of services – 3)	Application for loan assistance scheme
	Marriage assistance scheme
	Maintenance allowance for differently abled person
Directorate of Handlooms (No. of services – 6)	Awarding scholarships under Dr. MGR Handloom Weavers Welfare Trust
	Tamil Nadu Co-operative Handloom Weavers Savings and Security Scheme
	Tamil Nadu Co-operative Handloom Weavers old age pension scheme

	Tamil Nadu Co-operative Handloom Weavers family pension scheme
	Mahatma Gandhi Bunkar Bima Yojana
	Shiksha Sahayog Yojan Scheme under Mahatma Gandhi Bunkar Bima Yojana
Housing and Urban Development Department (No. of service – 1)	Tamil Nadu Regulations of Rights and Responsibilities of Landlords and Tenants Act
Transport Department (No. of service – 1)	e-Challan payment

Commercial Taxes and Registration Department (No. of services - 2)	Issuance of encumbrance Certificate
	Issuance of Certified Copies
Directorate of Public Health and Preventive Medicine (No. of services - 3)	CRS - Death Registration
	Birth Certificate
	Death Certificate
Total	130

Figure 1: Top 10 Transaction count of e-Sevai Services

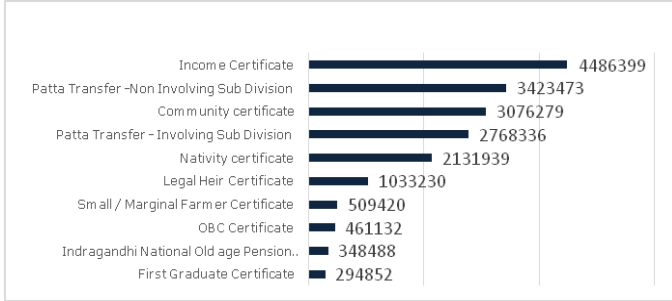


Table 4: Year wise transactions count Jan 2016 - Aug 2021

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* (Jan - Aug)	41,41,553	15,31,242	56,72,795
Total	5,34,56,699	40,64,519	5,75,21,218

*Period covered by COVID-19

Initially people had to physically visit the Common Service Centres for availing e-Services. In 2018, Open Citizen Portal was launched which enabled citizens to obtain e-Sevai services anywhere, anytime. There has been a steady increase in the number of transactions on the Open Citizen Portal since then. In 2018, only 2% of the e-Sevai transactions were delivered over Open Citizen Portal and that number has increased to more than 20% in 2021. This is only expected to grow further.

6.2 Aadhaar Permanent Enrolment Centres

Directorate of e-Governance/
Tamil Nadu e-Governance Agency (TNeGA) is the State Registrar for Unique Identification Authority of India (UIDAI) to carryout Aadhaar enrolment through Permanent Enrolment Centres across Tamil Nadu.

Aadhaar enrolment is done free of cost for the public.

Electronics Corporation of Tamil Nadu (ELCOT) and Tamil Nadu Arasu Cable TV Corporation (TACTV) were in turn appointed as enrolment agencies of Tamil Nadu e-Governance Agency. Permanent Enrolment Centres (PEC) are being operated at Secretariat, Ezhilagam, all Taluk offices, Head Quarters and Zonal Offices of Greater Chennai Corporation by Tamil Nadu Arasu Cable TV Corporation (TACTV). Electronics Corporation of Tamil Nadu (ELCOT) is operating the Permanent Enrolment Centres at all the Collectorates, Municipalities/ Corporation head offices (other than Chennai).

**Table 5: Aadhaar Enrolment and
Aadhaar Generated for
FY 2020-2021**

Enrolment Agency	No. of Centres	No. of Enrolments (in lakh)	Aadhaar Generated (in lakh)
TACTV	318	10.4	9.7
ELCOT	227	5.9	4.3
Total	545	16.3	14

**7. UNGAL THOGUTHIYIL
MUTHALAMAICHAR (UTM) AND
CHIEF MINISTER’S HELPLINE (1100)**

Chief Minister’s Helpline or ‘Integrated and Inclusive Public Grievance Chief Minister Helpline Management System (IIPGCMS)’ is an integrated system that allows citizens to register their petitions through multiple channels such as helpline (1100), web portal, mobile application, e-mail, social media or physical submission.

Chief Minister's Helpline is the unified grievance handling mechanism platform for the state and brings all grievance handling under one umbrella.

This system has effectively handled the "Ungal Thoguthiyil Muthalamaichar (UTM)" public petitions. The system assigns these applications to various field officers, tracks the applications and notifies the citizens about the outcome. This system also provides reports and dashboard to District Collectors, Head of Departments and Secretaries to monitor the disposal of grievances.

8. PROACTIVE GOVERNANCE

8.1 Proactive Services Delivery

Proactive services delivery is a unique concept to transform the Government services delivery mechanism by proactively

delivering the services to the citizens as and when they become eligible.

A proof of concept will be designed by connecting existing IT systems and applications with SFDB at the base.

9. EMERGING TECHNOLOGIES

9.1 e-Paarvai: AI based Cataract Detection System

Cataract is one of the main reasons of blindness in India and its detection in its initial stages can help save the vision. TNeGA has developed an AI based mobile application to provide quick screening of cataract. The pilot was done in three districts namely Madurai, Nagapattinam and Vellore and subsequently it has been rolled out in 14 districts. This application secured the NASSCOM “Exemplary” award recently.

9.2 Face Recognition System (FRS)

An Artificial Intelligence (AI) based Face Recognition System has been developed. It is in use for day-to-day attendance in TNeGA from November 2020. This system is being deployed at TANGEDCO office and it is planned to roll out in other offices also.

Some of the other applications developed using AI are as follows:

- I. **Chatbot** - TNeGA in collaboration with Anna University has developed Chatbot which provides conversational assistance in Tamil and English to citizens in availing various services from the Government in e-Sevai website (<https://www.tnesevai.tn.gov.in>).
- II. **Pest and Disease Identification**- AI based pest identification model developed

by TNeGA diagnoses the pest in paddy and disease in maize and suggests remedial measures when farmers upload the photo of the crop using Uzhavan app.

9.3 Tamil Nadu Blockchain Backbone – NambikkaiInaiyam

The Blockchain Backbone (Nambikkai Inaiyam) will enable departments of Government of Tamil Nadu to use the Blockchain infrastructure in a plug-n-play model. The data captured on the Blockchain backbone network can be trusted by all the departments and can be used as single source of truth without any further verification. For example, NambikkaiInaiyam can be used to develop applications for securing the documents and records of HR&CE, land records and its mutations, education certificates, marksheets, certificates and licenses issued through

e-Sevai platform, seed certification and handicraft certification.

9.4 Digital Infrastructure for Paperless e-Governance

9.4.1 e-Mail account for Tamil Nadu Government Employees

Secure e-Mail services are being provided to employees of Government of Tamil Nadu for use in official communication. With the help of NIC, 19,000 e-Mail accounts were created during the year 2020-2021. Work is in progress to upgrade the existing e-Mail service and create over 50,000 users to provide state-wide coverage.

9.4.2 e-Office

e-Office is the application suite that allows automation of routine tasks and processes in the Government offices. It helps to save paper, allows speedy disposal of files and improves governance. The audit and

history features add to the transparency of the decision making process.

So far, 10,000 users from 61 offices are using this application. The state-wide rollout will be done in phases with Secretariat departments to be taken up in the first phase.

10. CAPACITY BUILDING

TNeGA has setup the infrastructure to conduct training programs. This infrastructure would be used for capacity building of the state Government officials during e-Office roll out.

11. NAMADHU ARASU (MyGov)

'Namadhu Arasu' portal provides a unique platform for people to participate in Governance and to share ideas and

suggestions with Government in areas related to policies, programs and schemes.

12. STANDARDIZATION OF GOVERNMENT WEBSITES

To improve the usability and accessibility of information and services on Government websites, TNeGA is taking up standardization of District websites and enabled accessibility for persons with disabilities as per guidelines for Indian Government Websites (GIGW) for designing, developing and maintaining websites.

13. EXAM AS A SERVICE (EaaS)

To help recruit people quickly through an online exam, departments can use the service provided by TNeGA. It is quick and easy for departments to setup an exam in a secure manner. So far, 4 departments namely, Environment and Forests

Department, Teacher's Recruitment Board (TRB), Tamil Nadu Pollution Control Board (TNPCB) and Tamil Nadu Ex-servicemen's Corporation Ltd. (TEXCO) have used the system successfully and completed the recruitment process for 7,229 vacancies in a secure manner. Around 13.5 lakh candidates have appeared in the exams.

14. IT SECURITY AUDIT

TNeGA helps in conducting security audit of Government websites and applications by auditors empanelled with Indian Computer Emergency Response Team (CERT-In).

In the year 2020-2021, 72 Government websites / applications have undergone security audit.

15. SOFTWARE APPLICATIONS FOR GOVERNMENT DEPARTMENTS

TNeGA enables development of software required by various departments of Government of Tamil Nadu as follows :

S. No	Name of Department	Project Name	Website address
1.	Tamil Nadu State Disaster Management Agency (TNSDMA)	Tamil Nadu State Disaster Management Agency (TNSDMA) Website Development	https://tnsdma.tn.gov.in/
2.	Labour and Employment Department	Legal Metrology Complaint Tracking System (LMCTS)	https://tn.legalmetrology.in/

3.	Tamil Nadu Archives and Historical Research Department	Tamil Nadu Digi Archives Web Portal	https://digiarchives.tn.gov.in/
4.	Chennai Metropolitan Development Authority (CMDA)	Development of Web Enabled Single Window System for On-line Submission, Processing and Disposal of Planning Permission Applications, Building Permission Applications, Completion Certificate and Occupancy Certificate.	https://onlineppacmda.tn.gov.in/

5.	Environment and Forests Department	Development of Software Application for Conducting Online Examination for TNFUSRC	https://www.forests.tn.gov.in/pages/view/tn-forestnews
6.	Employment and Training Department	Virtual Learning Portal and e-Learning Platform with Analytics Dashboard.	https://tamilnaducareerservices.tn.gov.in/
7.	All Government Departments	electronics Transaction Aggregation and Analysis Layer (e-Taal)	https://etaal.gov.in
8.	Commissionerate of Land Reforms	Chief Minister's Uzhavar Paathukappu Thittam (CMUPT)	https://oap.tn.gov.in/cmupt/

9.	State Institute of Rural Development (SIRD)	End to End Computerization	https://crdpr.tn.gov.in
10.	Tamil Nadu Housing Board	Board Rental Management System	https://tnhb.tn.gov.in/
11.	Periyar University	Online admission Software for Distance education	http://pride.Periyaruniversity.ac.in
12.	State Planning Commission	Sustainable Development Goals Monitoring Platform	https://tnsdg.tn.gov.in

13.	Tamil Nadu Guidance Bureau	Biz Buddy portal	https://www.bizbuddy.tn.gov.in
14.	Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB)	Online application for new water connection for companies	https://cmwssbindust.in/WaterNew
15.	State Planning Commission	Web Monitoring System for State Planning Commission	https://pnd.schemes.tn.gov.in
16.	Labour and Employment Department	Development of web portal for Labour Department	https://labour.tn.gov.in/

17.	Tamil Nadu e-Governance Agency	Cloud – based Asset Management System	https://ams.tnegov.in
18.	Tamil Nadu e-Governance Agency	e-District Project Phase I & II (e-Sevai)	https://tnesevai.tn.gov.in
19.	Tamil Nadu e-Governance Agency	State Portal	http://www.tn.gov.in/
20.	Tamil Nadu e-Governance Agency	Permanent Enrolment Centres (Aadhaar Enrolment for above 5 years category)	https://uidai.gov.in/aadhaar_dashboard/
21.	Tamil Nadu e-Governance Agency	SMS based Tracking System	https://services.mgov.gov.in

22.	Tamil Nadu e-Governance Agency	Online Patta Transfer	https://tamilnilam.tn.gov.in/ CSC https://tamilnilam.tn.gov.in/Revenue/login.html
23.	Tamil Nadu e-Governance Agency	Tiny URL	https://tnegov.in/login
24.	Tamil Nadu e-Governance Agency	Tamil Nadu Geographical Information System	https://tngis.tn.gov.in
25.	Indian Medicine and Homeopathy	State Licensing Authority for Indian Medicine-website	https://www.tnslaim.tn.gov.in/

26.	Tamil Nadu Unorganized Workers Welfare Board	Integrated Application Software for Unorganized Workers Welfare Board	https://tnuwwb.tn.gov.in/
27.	Tamil Nadu Mediation and Conciliation Centre	Website Development	https://tnmcc.tn.gov.in
28.	Law Department	Web Application for Online Notary Appointment / Renewal of Practice	https://tnnotary.tn.gov.in/
29.	TNeGA	TNeGA Web portal	https://tnega.tn.gov.in/

30.	Entrepreneurship Development Institute of India (EDII) Department)	Academic Innovation and Entrepreneurship Development Programme (AIEDP) Portal	https://editn.in/
31.	Employment and Training Department	Employment Engagement & Tracking Module	http://www.tnprivatejobs.tn.gov.in/

CHAPTER-IV

TAMIL NADU ARASU CABLE TV CORPORATION LIMITED (TACTV)

1. INTRODUCTION

Arasu Cable TV Corporation Ltd., was formed under the Companies Act, 1956 on 04.10.2007 with the objective to provide high quality Cable TV service at an affordable cost to the public. It was renamed as "Tamil Nadu Arasu Cable TV Corporation Ltd." (TACTV) on 26.08.2011.

2. OBJECTIVES

Tamil Nadu Arasu Cable TV Corporation is a State Government Undertaking in the Cable TV Industry having the Digital Addressable System (DAS) License for providing Digital Cable TV Service. TACTV started the Digital Cable TV Service and distribution of free Standard Definition (SD)

Set-top boxes on 01.09.2017. The High Definition Cable TV service was started on 02.07.2018 at 5 locations, viz., Chennai, Salem, Coimbatore, Tiruchirappalli and Madurai.

TACTV is providing Digital Cable Service at the subscription fee of Rs.140/- +GST per month with 201 channels (140 Free to Air (FTA) channels + 61 Pay channels).

3. ARASU e-SEVAI CENTRES

TACTV has established Arasu e-Sevai Centres to provide Government to Citizen Services (G2C) in the year 2014. At present, TACTV is operating with 580 Arasu e-Sevai Centres across the State in urban areas and providing 130 citizen centric services. In addition to the above, the following services are provided:

1. Uploading the certificates of shortlisted candidates for Tamil Nadu Public Service Commission (TNPSC)
2. Printing of replacement Electoral Photo Identity Card (EPIC)
3. Online registration of textbooks being sold by Tamil Nadu Textbook Corporation and Education services

As on date, 1800 franchisees have been empanelled.

4. AADHAAR PERMANENT ENROLMENT CENTERS (PECS)

TACTV has established 318 Aadhaar Permanent Enrolment Centres across the State. Besides these, one "Mobile Aadhaar Enrolment Unit" is functioning in Greater Chennai Corporation for senior citizens and persons with disability.

CHAPTER-V

TAMIL NADU FIBRENET CORPORATION LIMITED (TANFINET)

Tamil Nadu FibreNet Corporation Ltd., (TANFINET) is a Public Sector Undertaking of the state Government incorporated on 08.06.2018 under the Companies Act, 2013, to digitally empower every citizen in Tamil Nadu by harnessing the power of Information Technology. This will be achieved by connecting Village Panchayats, Town Panchayats, Municipalities and Corporations of Tamil Nadu with high-speed bandwidth using Optic Fibre Cable (OFC), under the BharatNet and TamilNet projects.

1. BHARATNET

BharatNet is a project of the Government of India that envisages connecting all Village Panchayats of the country with high-speed bandwidth using Optical Fibre Cable (OFC). Government of India has approved the project at an estimated cost of Rs.1815.31 crore. Under this project, all the 12,525 Village Panchayats of the state will be provided with a minimum scalable bandwidth of 1 Gbps.

This project is expected to be completed within one year from the date of issue of work order. The implementation of the project has been divided into four packages as follows:

Package Name	No. of Blocks	No. of GPs	OFC Route Aerial Length (in Km)	OFC Route UG Length (in Km)
A	75	3,095	11,906	1,591
B	94	3,001	9,615	1,570
C	110	3,326	11,335	1,486
D	109	3,103	10,148	1,849
Total	388	12,525	43,004	6,496

2. TAMILNET

In addition to the BharatNet project, TamilNet is planned to connect all the Town Panchayats, Municipalities, Corporations and District Head Quarters of the state through Optical Fibre Cable (OFC) and provide full benefit of optical fibre connectivity to all parts of state.

3. BENEFITS OF BHARATNET PROJECT

The BharatNet infrastructure will allow provision of Digital Services viz., e-Education, Tele-Medicine, Triple Play Services (Telephone, Television & Internet Connection) to the villages at an affordable cost. It will also allow Government offices, public institutions, schools, colleges and industries to use high-speed bandwidth to deliver citizen centric services at village level. The project will improve the socio-economic conditions of the state by creating jobs and delivering services in rural areas.

CHAPTER-VI

TAMIL VIRTUAL ACADEMY (TVA)

1. INTRODUCTION

Tamil Virtual Academy (TVA) was established as Tamil Virtual University (TVU) as per the Tamil Nadu Societies Registration Act, 1975. TVU was renamed as Tamil Virtual Academy (TVA) on 16th July 2010. TVA aims to provide Tamil education through internet for the Tamil Diaspora and promote Tamil computing.

2. OBJECTIVES

- ❖ To promote Tamil computing
- ❖ To disseminate information about Tamil culture, civilization to Tamil Diaspora and others across the globe

- ❖ To conduct certificate, higher certificate, diploma and degree courses in Tamil
- ❖ To maintain Tamil Digital Library and Digital Cultural Repository
- ❖ To enable access to its content through www.tamilvu.org

3. ACADEMIC PROGRAMMES

TVA offers Primary Course, Certificate Course, Higher Certificate Course, Diploma, Higher Diploma and Degree (B.A. Tamilology) Courses.

Primary Course is designed for kindergarten students.

Certificate Courses are offered at three levels as below:

- Basic Level(equivalent to classes 1 and 2)

- Intermediate Level (equivalent to classes 3 and 4)
- Advanced Level (equivalent to classes 5 and 6)

So far, 9,015 students have passed in the above courses.

Higher Certificate Courses are offered at three levels as below:

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

So far, 876 students have passed in the above courses.

B.A. (Tamilology) Degree programme is a modular course comprising of Diploma, Higher Diploma and Degree courses.

The details of the students who have passed so far is as follows:

- ❖ Diploma – 1,591
- ❖ Higher Diploma -1,107
- ❖ Degree – 773

The above programs are delivered through 110 contact centres located in 22 countries.

4. TAMIL DIGITAL LIBRARY

The Government has sanctioned Rs.1.00 crore for creation of Digital Library which has been utilized. Further, Rs.1.05 crore for digitization and cataloguing of palm-leaf manuscripts in Dr.U.Ve.Sa Library, Directorate of Indian Medicine & Homeopathy and the International Institute

of Tamil Studies. This work is under progress.

Tamil Digital Library (www.tamildigitallibrary.in) provides online access to rare books, periodicals and palm-leaf manuscripts of various subjects like literature, religion, history, medicine and science from 16th century onwards. This is the largest digital library in South Asian languages, consisting of 35,629 books/periodicals and 7,68,097 palm-leaf manuscript pages. The library has been used by 1,45,06,345 users.

5. TAMILAR TAGAVALAATRUPPAI

TVA has developed “Tamilar Tagavalaatruppai” (<https://www.tagavalaatruppai.in>) which consists of images of archaeological and

historical monuments and cultural remains in Tamil Nadu.

This cultural repository provides information/photographs about sculptures, inscriptions, temples, coins, excavations and copper plates.

So far, this website has been visited by 11,12,087 visitors.

6. e-ASIRIYAR PROJECT

TVA imparts Tamil education through web to people living all over the world. This project is being modernized by developing an integrated learning platform using current technologies such as 3D-Animation, Virtual Board, Virtual Reality (VR) and Artificial Intelligence (AI).

7. TAMIL COMPUTING

Tamil computing enables computer to understand the Tamil language. TVA is working on image processing, optical character recognition, computational linguistics, use cases and tool development. Projects on sentence pattern, structures, rules in Tamil, Tamil grammar checker and speech processing tool are under progress.

8. TAMIL UNICODE

TVA is an institutional member of the Unicode Consortium, USA. This enables TVA to include all the Tamil alphabets, old Tamil fractions and symbols, Tamil vattezhuthukkal into the database of Unicode Consortium.

9. OUTREACH INITIATIVES

9.1 Kani Tamil Peravai (KTP)

KTP is a programme to create awareness among students about Tamil Computing. Accordingly, KTP has been initiated in Universities/Colleges in Tamil Nadu and around 200 centres have been started so far.

9.2 Translation of Khan Academy's Educational videos

"Khan Academy" has created educational videos in English relating to subjects such as Mathematics, Science, History, Arts, Humanities, Economics and Finance. TVA is translating them into Tamil for wider use. So far, around 4,000 videos have been translated into Tamil with voice-over and subtitles.

10. MONTHLY LECTURE SERIES

In order to promote Tamil heritage, art and culture, TVA organizes monthly lecture series by renowned scholars. This includes scholars such as Dr.Avvai Natarajan, Dr.Mylsamy Annadurai, Dr.R.Balakrishnan IAS (Rtd.), Dr. Nagasamy, Thiru. Tiruppur Krishnan and other experts. So far, 56 lectures have been organized.

11. CONFERENCES AND WEBINARS

11.1 Online Faculty Development Programme

As a pioneering effort, TVA hosted a seven day international online faculty development programme titled “Modern Development in Tamil Computing and its New Techniques” during August 2020 with nearly 800 participants.

11.2 International webinar on Technologies in Tamil Language

A one week international level webinar on technologies in Tamil Language was organized during October 2020. More such seminars will be conducted.

11.3 Elocution competition

To encourage and enrich the Tamil knowledge of foreign students, Tamil Virtual Academy conducts elocution competitions. The last one was conducted in December 2020 in which 31 students from various countries participated.

11.4 International Conference in Tamil Computing

A two day International Conference on “Development and Challenges of Tamil Computing” was held in March 2021 to promote interest of students in Tamil Computing.

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 ICT areas.

ICTACT follows a seven pillar approach namely, faculty development, student skill development, entrepreneurship development, youth empowerment, digital empowerment, industry-institute interaction and research / publications. ICTACT is governed by an autonomous board of

governors with representatives from the Government of Tamil Nadu and the leading companies in the ICT industry.

2. ACTIVITIES OF ICTACT

The activities and achievements of ICTACT for the year 2020-21 are:

2.1 Faculty Development

2,239 faculty members have been trained through 91 faculty development programs in various ICT areas in the state.

2.2 Skill Development

ICTACT has trained and certified 7,578 graduating students from rural colleges in the state to improve their employability.

2.3 Entrepreneurship Development

It has conducted 568 entrepreneurship awareness seminars benefiting 76,733 students from 243 colleges across the state.

2.4 Youth Empowerment

- Organizing Learnathons – the “New India Learnathon 2020” was organized for college students to inculcate the habit of self-learning. 1,25,818 students participated and completed 2,84,881 online courses.
- Conducted “SkillEdge” initiative exclusively for the first-year college students, in which 19,534 students participated.
- In the context of COVID-19 lockdown and closure of colleges, organized “GET SET GO” initiative for the students to

make up for the lost in-class experience by interacting with the industry experts. 59,873 first year college students benefited from this program.

2.5 Research and Publications

ICTACT publishes 6 peer reviewed International Research Journals on quarterly basis. During the year 2020-21, 188 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)

In view of the importance of Data Science and Machine Learning, ICTACT has launched a new Journal in 2020, named "ICTACT Journal on Data Science and 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. 14,79,812 candidates have been assessed and certified for Digital Literacy during 2020-21.

2.7 Global Technology Forum

ICTACT organizes Global Technology Forum every year along with Information Technology Department, Government of Tamil Nadu. The forum aims to promote research activities on Innovation and Technology. It features paper presentations, keynote sessions, tutorial sessions by global experts.

'Global Technology Forum – 2020' was hosted for 5 days in which 51 keynote speakers and 21 international speakers participated. 10 deep dive technical tutorials were conducted, 300+ technical research papers in emerging technologies were presented.

2.8 Sky Campus – Digital Knowledge Webinar Series for Educators

Responding to the challenges posed by COVID-19, ICTACT has launched its webinar knowledge series through its Sky Campus Platform with an objective of providing industry expert sessions on various topics relevant to the teachers. It has conducted 8 seasons comprising of 51 sessions. 1,91,023 educators have benefited from 86 eminent speakers.

CHAPTER-VIII

CONCLUSION

Hon'ble Chief Minister's vision is to provide clean governance to the people and to make the state as number one destination in Information and Emerging Technologies. We promise to deliver on these aspirations by deploying data centric governance, enable participative governance and ensure swift delivery of services to the people. Our departments' strategy will be shaped by expert advice of the "Advisory Council for Future" under the overall guidance of the Hon'ble Chief Minister. The core strengths of Tamil Nadu will be leveraged to attract investment from leading IT and Emerging Technology companies. This will enable Tamil Nadu to gain strategic advantage, achieve

sustained economic growth and create high quality jobs for the youth of Tamil Nadu.

T. MANO THANGARAJ
Minister for Information Technology



Ford Motors, Sholinganallur



Wipro, Sholinganallur



CTS, Sholinganallur



HCL, Sholinganallur



Tech Mahindra, Sholinganallur



TPCL, Coimbatore



Wipro, Coimbatore



ELCOSEZ – Ilandhaikulam, Madurai



ELCOSEZ – Vadapalanji, Madurai



ELCOSEZ-Navalpattu, Tiruchirappalli



ELCOSEZ- Gangaikondan, Tirunelveli



ELCOSEZ- Gangaikondan, Tirunelveli



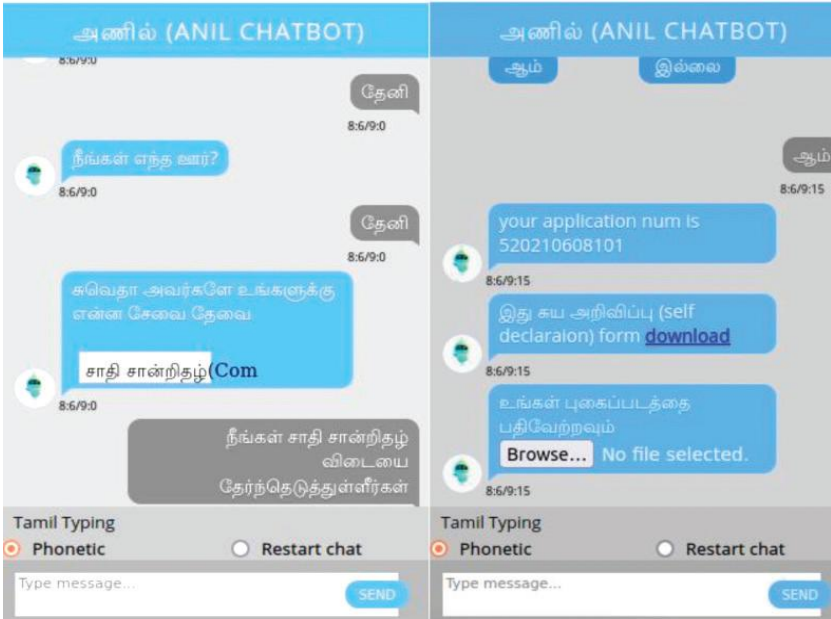
ELCOSEZ- Jagirammappalayam, Salem



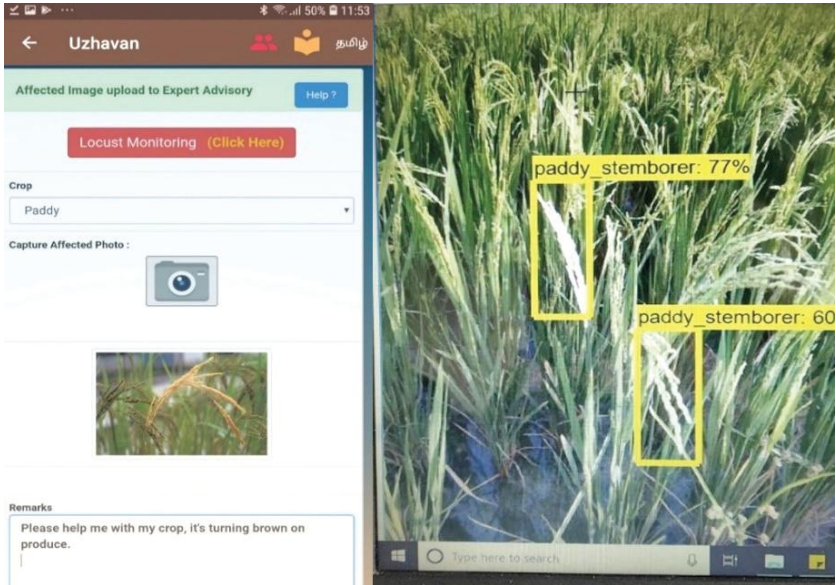
ELCOSEZ-Viswanathapuram, Hosur



Health workers using e- Paarvai app for Cataract screening



Applying for a Community Certificate using Chatbot



The picture of the diseased plant uploaded on Uzhavan app and the recommendation of the AI model is reviewed by an expert

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ஹெக்டேர் என்ற
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எண்ணிக்கையைக் குறைக்கலாம்
மேலும் தகவலுக்கு பின்வரும்
இணைய சேவையை அணுகவும்.
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தங்கள் பயிரியில் படை புழு
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அழிக்கலாம்
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மேலும் தகவலுக்கு பின்வரும்
இணைய சேவையை அணுகவும்.
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Text Message

**Farmer receives a SMS advising the remedial
measures**

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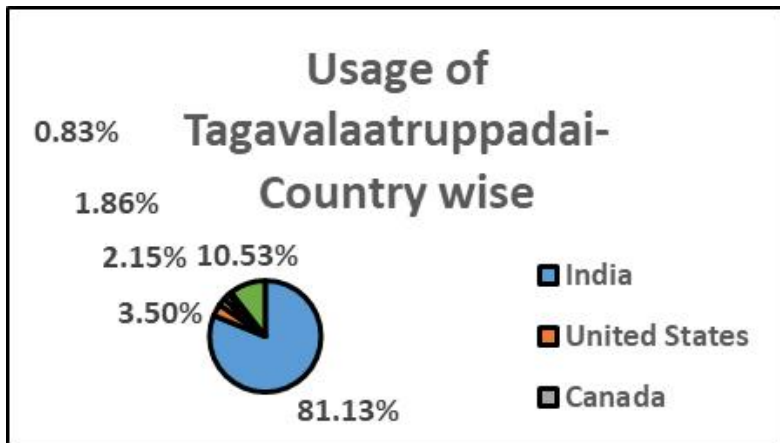
The academic programmes are provided through 110 contact centres in 22 Countries



The Academic Programmes are provided through 110 Contact Centres in 22 countries



Tamilar Tagavalaatrappadai Website Page View



Data as per Google Analytics

