INFORMATION TECHNOLOGY DEPARTMENT

POLICY NOTE
2020-2021

DEMAND No. 31

R.B. UDHAYAKUMAR

Minister for Revenue and Disaster Management and Information Technology

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CHAPTER – I
Introduction

Tamil Nadu is one of India's most progressive State. Information Technology is today driving economies and businesses worldwide and has helped transformation of the State into a modern economy. Today, Tamil Nadu has emerged as one of the leading player and acknowledged as Global leader in certain verticals of the Information Technology (IT) and Information Technology enabled Services (ITeS) sector.

Tamil Nadu is a role model for the other States in India as far as Good Governance is concerned. Good Governance is about processes for making and implementing decisions, ensuring delivery of public services in a speedy, reliable and transparent manner.

Tamil Nadu continues to be a "Destination of Choice" for the IT/ ITeS sector in India. The

State has been upgrading its IT-infrastructure in a dynamic manner, so as to facilitate speedy access to information and deliver various services of the Government of Tamil Nadu to the citizens in a faster and efficient manner. The Vision 2023 Document aims to transform the State as the "Innovation Hub and Knowledge Capital" of the country through creation of world class institutions in various fields and by utilizing the human talent available in the State. To achieve this, the State has been effectively leveraging the IT-skills of its human resources to match with the growing demand of skilled workforce.

The Information Technology Department was set-up to promote the IT industry in the State as well as to give a fillip to e-Governance. The objectives of the Information Technology Department are to –

➢ Provide Government services, both informational and transactional, to Citizens, at their door steps through Internet;

- Make Tamil Nadu, the Best State in IT enabled Governance;
- Substantially increase the software exports of Tamil Nadu;
- Provide Cable TV services to all households in Tamil Nadu at reasonable rates;
- Provide High Speed Internet connectivity to every household through Optical Fibre Technology to bridge the digital rural-urban divide;
- Provide Tamil Education to the Tamil Diaspora through the web and take Computing in Tamil to a higher level;
- Enhance the quality of life of citizens through Information and Communication Technology.

Since inception, the Information Technology Department has been facilitating other Government Departments for successful implementation of their e-Governance projects, right from studying proof of concept, designing

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and developing applications, hardware sizing, procuring, hosting, networking, managing, IT security & auditing, training, outsourcing and providing support services, etc. It has established a State-of-the-Art IT-Infrastructure for connectivity, hosting and allied services, disaster recovery and e-Security.

To promote IT/ITeS industry in the State and to attract more investments, 8 Special Economic Zones (ELCOSEZs) were established in Tier-II cities and a Start-up Warehouse established at Chennai and Coimbatore. A Centre of Excellence in FinTech and Centre of Excellence in Emerging Technologies (CEET) were established at Chennai. The Department has brought out a comprehensive e-Governance Policy and Information and Communication Technology Policy (ICT Policy) to take the IT revolution to next stage. To cater the needs of Government Departments, a dedicated IT-Cadre workforce has been created.

To make the administration functions paper-less, an e-Office Application is being implemented in Government Departments. The State has been partnering with various stakeholders in Government like MeitY, NIC, C-DAC, STPI, SETS, STQC, IIT-MRP and private organizations like NASSCOM, CII, FICCI, ELCINA, MAIT, etc. for conducting various workshops, conferences and premier IT-events.

To revolutionize the way Government services are offered to citizens, a Zero Knowledge Proof Identity Based Predictive Services Delivery Project will be implemented by establishing and leveraging the State Family DataBase (SFDB) and Block-Chain Backbone infrastructure. This pioneering initiative will "take Government to the Citizens", thus eliminating the need for the citizens to request G2C services. An ambiguous BharatNet and TamilNet project will be implemented to connect all 12,524 Village Panchayats of the State with minimum 1 Gbps

high-speed connectivity, will help to achieve and sustain the targets of Sustainable Development Goals (SDG) of United Nations.

CHAPTER-II

ELECTRONICS CORPORATION OF
TAMIL NADU LIMITED

1. Introduction

Electronics Corporation of Tamil Nadu (ELCOT), 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 main objective of assisting development of Electronics in the State. ELCOT as a value creator, since inception has been continuously striving to add value for all its stakeholders by harnessing the power of Information and Communication Technology. ELCOT had contributed to the growth of Electronics Industry in the State by promoting many Joint Ventures, Associate Ventures etc. Keeping with the trend post liberalisation and globalisation, ELCOT gradually re-engineered itself as a procurement agency, primarily for Electronics and IT/ITES products and services. Later, ELCOT branched out to establish IT Special Economic

Zones (SEZs) and has set-up 8 IT SEZs in Chennai and in Tier-II cities of the State viz., Coimbatore, Madurai (2), Tiruchirappalli, Salem, Tirunelveli and Hosur, in 1321.61 acres of land at a total investment of Rs.664.88 crore, providing direct employment opportunities to around 94,000 persons.

ELCOT has also created IT infrastructure including Tamil Nadu State Wide Area Network (TNSWAN), Tamil Nadu State Data Centre (TNSDC), Disaster Recovery Centre (DRC), Cloud, etc.

2. Activities

2.1. Procurement

ELCOT as an optional Procurement Agency, procures quality hardware and software products and ensures that the supplies are made within the stipulated time to Government Departments, State Public Sector Undertakings and State Autonomous Bodies as per G.O.(Ms.) No.58 of Finance (BPE) Department, dated16.02.1999.

2.2. ELCOT e-Market

ELCOT e-Market portal (https://emarket.elcot.in) enables Government Departments, State Public Sector Undertakings and State Autonomous Bodies to generate digitally signed Proforma Invoice online, by selecting the required Hardware and Software products. It also facilitates them to pay online and track the status from issuance of Purchase Order to creation of Final Invoice. This e-Market portal has been launched by Hon'ble Minister for Information Technology during Connect 2019.

2.3. IT Promotion and Development

Information Technology (IT) and Information Technology Enabled Services (ITeS) industry, one of the key driving forces fuelling India's economic growth, has transformed India's image on the global platform. To reap the benefits of this trend, Government of Tamil Nadu through ELCOT is carrying out various initiatives as detailed below:

1. Establishing IT/ITeS SEZs across Tamil Nadu including Tier-II Cities.

2. Facilitating and participating in prestigious National and International ICT events/ Road Shows to promote Tamil Nadu as the Destination of Choice for IT/ITeS investment.

3. Issue No Objection Certificate (NOC) for promoting necessary physical infrastructure like IT Park / Building.

4. Establishing Start-up Warehouses to promote Technology Start-ups by young entrepreneurs.

5. Handholding / facilitating IT/ITeS companies for obtaining all approvals required for establishing their facility.

6. Successful in bringing in 11 MoUs for an investment of around Rs.11,974 crore in the IT/ITeS Sector during the recently

concluded Global Investors Meet 2019 (GIM 2019).

2.4. IT and Electronics Hardware Promotion Activities

ELCOT conducts vigorous marketing by way of participating in National and International events like India International Trade Fair at New Delhi, Bengaluru Tech Summit, NASSCOM Technology Leadership Forum, GITEX-Dubai, Seminars, Road Shows in major Indian cities and abroad, Exhibitions and Advertisements.

Government of Tamil Nadu through ELCOT has been conducting the flagship event CONNECT on Information and Communication Technology (ICT) in Chennai in association with CII for the past 18 years. This premier event is an intellectual and impactful platform which brings together Technologists, Industry Leaders, Academicians, Infrastructure providers and Start-ups to confer

on latest trends and developments in Information Technology. "Source India", organized by Electronics Industries Association of India (ELCINA), is another premier event supported by Government of Tamil Nadu through ELCOT. The event provides great value to all Large, Small and Medium industries in the field of Electronics. To facilitate Electronics Industries in the State by establishing necessary infrastructure ecosystem, it is proposed to create land bank for Electronics Manufacturing Industries.

ELCOT also participates in the delegations led by Hon'ble Chief Minister, Hon'ble Ministers and higher officials visit to foreign countries to attract investments to Tamil Nadu.

2.5. ELCOT Special Economic Zones (ELCOSEZs)

ELCOT has established 8 IT/ITeS Special Economic Zones (ELCOSEZs) to accelerate and

sustain the growth of IT sector in the State, particularly by promoting IT/ITeS industries in Chennai and Tier II cities such as Coimbatore, Madurai, Tiruchirapalli, Tirunelveli, Salem and Hosur.

ELCOT has created State-of-the-Art infrastructure and facilities in these ELCOSEZs, which is being put to optimal use by allotting the available land and space to IT/ITeS companies.

Software exports from these ELCOSEZs is estimated at Rs. 21,700 crore for the year 2019-20. These ELCOSEZs have created 94,000 direct employment benefits and have made a significant contribution to the overall growth of exports, investment and employment generation in IT/ITeS industry in the State.

2.5.1. ELCOSEZ- Sholinganallur, Chennai

In Chennai at Sholinganallur, an ELCOSEZ has been established by ELCOT in 377.08 acres of land with an investment of Rs.198.55 crore.

ELCOT has created necessary common infrastructure and has constructed an administrative building measuring 6,358 sq.ft.

For improving the facilities in this ELCOSEZ further, additional infrastructure works are being carried out at a cost of Rs.36.05 crore during the year 2019-2020.

In this ELCOSEZ, major companies such as M/s. Wipro Ltd., M/s. HCL, M/s. Tech Mahindra, M/s. Ford Motor Pvt. Ltd., M/s.Cognizant Technologies Solutions Pvt. Ltd. have established their facility in a built-up space of 109.31 lakh sq.ft. and are in operation with 68,600 employees. These companies are into IT/ITeS sectors such as Software Development, Maintenance & Testing, Consulting and Business Process Outsourcing.

Based on the announcement of the Hon'ble Chief Minister of Tamil Nadu, the construction of ELCOT IT Tower measuring 2.33 lakh sq.ft. is in progress at an estimated cost of Rs.83.73 crore

and is expected to be completed by the end of 2020. In addition to this, infrastructure works are also being carried out at a cost of Rs.10.62 crore.

2.5.2. ELCOSEZ Vilankurichi, Coimbatore

In Coimbatore at Vilankurichi, an ELCOSEZ has been established by ELCOT in 62 acres of land with investment of Rs.167.31 crore. ELCOT has created necessary common infrastructure and has constructed an administrative building measuring 3,524 sq.ft.

M/s. WIPRO and M/s. TIDEL Park Coimbatore Limited (TPCL) have created their facility by constructing 23 lakh sq.ft. IT building and are in operation with 14,300 employees.

As per the announcement of Hon'ble Chief Minister, ELCOT is planning to construct an IT Tower measuring 2.66 lakh sq.ft. at an estimated cost of Rs.114.16 crore.

2.5.3. ELCOSEZ - Ilandhaikulam, Madurai

In Madurai at Ilandhaikulam, an ELCOSEZ has been established by ELCOT measuring 28.91 acres with an investment of Rs.34.41 crore. ELCOT has created necessary common infrastructure and has constructed an Administrative-cum-IT building measuring 60,205 sq.ft.

In the ELCOT IT building, space has been allotted to the companies such as M/s. Galaxy Infotech, M/s. AMBC Technologies Pvt. Ltd., M/s. SBL Knowledge Services Pvt. Ltd., M/s.Neeyamo Enterprises Solutions Private Ltd., M/s. CVIAC Consulting.

These companies are into IT/ITeS sectors such as Consulting, Application Development, Business Process Outsourcing and Digitisation of Data and are functioning with around 1600 employees.

IT/ITeS companies such as M/s.Honeywell Technologies Ltd., M/s. HCL Info Systems Ltd., M/s. Chella Software Pvt. Ltd. and M/s. Rebar Design & Detail Pvt. Ltd. have been allotted land in this ELCOSEZ.

M/s.Honeywell Technologies Ltd., M/s. HCL Info Systems Ltd. & M/s. Chella Software have constructed 7.06 lakh sq.ft. IT space and are in operation with 4,300 employees.

2.5.4. ELCOSEZ – Vadapalanji, Madurai

In Madurai at Vadapalanji, an ELCOSEZ has been established by ELCOT in 213 acres of land with an investment of Rs. 66.51 crore. ELCOT has completed the common infrastructure in this ELCOSEZ, including construction of Rail over Bridge which was necessary for this ELCOSEZ. ELCOT has also constructed an Administrative-cum-IT building measuring 70,139 sq.ft.

In the ELCOT IT Building, space is allotted to companies such as M/s. Neeyamo Enterprise

Solutions Pvt. Ltd., M/s. Neeyamo Works Technologies Pvt. Ltd., M/s. DBI Digitalization and Implementation Pvt. Ltd. and M/s. Chain-Sys Software Exports Pvt. Ltd.

IT/ITeS companies such as M/s. HCL, M/s.Tech Mahindra, M/s. Chain-Sys. Software Exports Pvt. Ltd., M/s. Sutherland Global Services Ltd., M/s. Caliber Point, M/s. Health Plan System (India) Pvt. Ltd. and M/s. Empire Photovoltaic Systems Pvt. Ltd. have been allotted land in this ELCOSEZ.

2.5.5. ELCOSEZ-Navalpattu, Tiruchirappalli

In Tiruchirappalli at Navalpattu, an ELCOSEZ has been established in 123.23 acres of land with an investment of Rs.60.08 crore. ELCOT has created necessary common infrastructure and has constructed an Administrative-cum-IT building measuring 59,960 sq.ft.

In the ELCOT IT building, the companies such as M/s. iLink Systems Pvt. Ltd, M/s. Scientific Publishing Company , M/s. Vuram Technology Solutions Pvt. Ltd., M/s. Vdart Technologies, M/s. GI Tech Gaming Co. India Pvt. Ltd., M/s. VR Della IT Services Pvt. Ltd. and are functioning with 1350 employees. These companies are into IT/ITeS sectors such as e-Publishing, Software development, Business Process Management Services & Solutions, and Gaming Software development.

IT/ITeS companies such as M/s. Sutherland Global Services Ltd., M/s. Zylog Systems Ltd., M/s. Unlimited Innovations India Pvt.Ltd., M/s. Assyst International Pvt. Ltd., M/s. i Link Multitech Solutions Pvt. Ltd., M/s. Vdart Technologies and M/s. Health Plan Systems (India) Pvt. Ltd. have been allotted land in this ELCOSEZ.

As per the announcement made by Hon'ble Chief Minister, ELCOT is planning to construct an

IT Tower measuring 1.16 lakh sq.ft. in this ELCOSEZ at an estimated cost of Rs.48.10 crore.

2.5.6. ELCOSEZ- Gangaikondan, Tirunelveli

In Tirunelveli at Gangaikondan, an ELCOSEZ has been established in 290 acres of land with an investment of Rs.55.88 crore in this ELCOSEZ. ELCOT has created necessary common infrastructure and has constructed an Administrative-cum-IT building measuring 56,720 sq.ft.

In the ELCOT IT Building, space is allotted to companies such as M/s. NilaApps Private Limited and M/s. SBL Knowledge Services Limited.

IT/ITeS Companies such as M/s. Syntel International Pvt. Ltd., M/s Sutherland Global Services Ltd., M/s. Deccan I Services and M/s. A & D Cosmic Power have been allotted land in this ELCOSEZ.

M/s. Syntel International Pvt. Ltd has constructed a 2.60 lakh sq.ft. IT building and is operating with around 200 employees providing software services.

2.5.7. ELCOSEZ- Jagirammapalayam, Salem

In Salem at Jagirammapalayam, an ELCOSEZ has been established by ELCOT in 53.33 acres of land with an investment of Rs.41.82 crore. ELCOT has created necessary common infrastructure and has constructed an Administrative-cum-IT building measuring 62,174 sq.ft.

In the ELCOT IT building, companies such as M/s. Vee Imaging Solutions Pvt. Ltd., M/s. Knowledge Lens Private Ltd., M/s. Dilogy Solutions LLP, M/s. StinSoft Technologies Private Ltd. and M/s. eMudhra Ltd. are in operation which are into IT/ITeS sectors such as Software development, Hardware development R&D, Internet of Things (IoT), Artificial Intelligence

(AI), Industrial Automation, Machine Learning, Big Data, Architect consulting, IT Consultancy services, Digital signature Support Solutions. These companies are operating with around 220 employees.

Companies such as M/s. Reveille Technologies Pvt Ltd. ,M/s. Nuratech Consultancy Services Private Ltd and M/s. DBI Digitalization and Implementation Pvt. Ltd. are also allotted space in the ELCOT IT Building.

IT/ITeS Companies such as M/s. Mahima Technologies Pvt. Ltd., M/s. Vee Technologies, M/s. eMudhra Ltd., M/s. Anmol Technologies Pvt. Ltd., M/s. FocusR Consultancy and Technologies (P) Ltd have been allotted land in this ELCOSEZ.

2.5.8. ELCOSEZ-Viswanathapuram, Hosur

In Hosur at Viswanathapuram, an ELCOSEZ has been established by ELCOT in 174.47 acres of land with an investment of Rs.41.75 crore. ELCOT has created necessary common

infrastructure and has constructed an Administrative-cum-IT Building measuring 62,100 sq.ft.

For improving the facilities in this ELCOSEZ, further additional infrastructure works are being carried out at a cost of Rs. 2.56 crore.

In the ELCOT IT Building, space is allotted to companies such as M/s. UST Global International Private Limited, M/s. Chandu Soft Technologies Pvt. Ltd., M/s. Eminentlabs Software Private Limited, M/s. Thendral Infotech and M/s. Entoss Pomfret Systems Pvt Ltd.

M/s. UST Global International Private Limited and M/s. Chandu Soft Technologies Pvt. Ltd., have established their operation which are into IT/ITeS sectors such as Semiconductor testing and Software development.

IT/ITeS companies such as M/s. Okaya Infocom Pvt. Ltd., M/s. CRM IT Solutions Pvt.

Ltd. And M/s. CRM Infotech India Pvt. Ltd. have been allotted land in this ELCOSEZ.

2.6. Start-up Warehouses at Chennai & Coimbatore

Pursuant to an announcement by the Hon'ble Chief Minister to give a fillip to the entrepreneurial capabilities of our youth, ELCOT with NASSCOM as Knowledge Partner has established a Start-up Warehouse with 90 seater IT space at TIDEL Park Limited, Chennai in a built up space of 6,860 sq.ft. at a cost of Rs.3.53 crore. 44 Start-ups have incubated successfully from this Warehouse. Currently, 17 Start-ups are in operation.

Similarly, a 50 seater Start-up has been established in TIDEL Park Coimbatore Ltd. at an investment of Rs.2.07 crore.

2.7. Centre of Excellence in FinTech (COE)

To make Tamil Nadu a leader in financial technologies, R&D investments, employment

opportunities and financial inclusion, a Centre of Excellence (CoE) in FinTech has been set up at Software Technology Parks of India (STPI), Chennai.

This CoE named as "FinBlue" has been launched by Hon'ble Chief Minister on 27th Feb 2019. This CoE is funded by Government of India (Rs.5.75 crore), Government of Tamil Nadu (Rs.5.75 crore) and by private sector investment to the tune of Rs.11.50 crore.

Currently, 3 Start-ups are operating in the STPI incubation facility. Necessary support, mentoring and guidance are being provided to these Start-ups.

2.8. IT-Infrastructure

IT-Infrastructure is the backbone for providing e-Governance services to Citizens. This infrastructure forms a combination of hardware, software, network, applications, database and hosting.

ELCOT has established and is maintaining the following IT Infrastructure services:-

2.8.1. Tamil Nadu State Wide Area Network (TNSWAN)

TNSWAN commenced its operations on 01.12.2007 as a shared scheme between the Central and State Governments. Currently, the scheme is in operation with State funding. TNSWAN provides Voice, Data and Video services to Government Departments for efficient workflow and delivery of citizen services.

Initially, TNSWAN commenced its operations with 708 PoPs (Points of Presence). Currently, there are 828 PoPs in the network. The Network Operation Centre (NOC) is located at ELCOT, Perungudi.

More than 3000 Government Offices of Commercial Taxes Department, Department of Treasuries and Accounts, Tamil Nadu Water and Drainage Board, Employment and Training, etc. are connected to TNSWAN.

2.8.2. TNSWAN Phase-2 extension

Government has accorded approval to extend TNSWAN Phase-2 operations by 3 more years at a project outlay of Rs.69.90 Crore starting from February 2019, with the existing hardware. An MoU has been entered into with M/s. BSNL towards provisioning of Bandwidth and a System Integrator (SI) has been selected for Operation and Maintenance (O&M).

2.8.3. National Knowledge Network (NKN)

National Knowledge Network (NKN) is a State-of-the-Art Multi Giga Bit Network aimed at connecting all Universities, Colleges and Research Establishments across the Country. Both TNSWAN and TNSDC have been provided with 1 Gbps connectivity through NKN, enabling the user Departments to access applications hosted at the National level. All TNSWAN District PoPs are integrated with NKN to avail higher bandwidth up to 1Gbps.

2.8.4. Redundant Connectivity at TNSWAN

Primary connectivity for TNSWAN Tier-II PoP at Taluk, BDO and RDO level is provided by BSNL. In order to ensure uninterrupted connectivity at these Tier-II PoPs, a secondary 2 Mbps MPLS-VPN (1:1) redundant connectivity has been implemented. Redundant links have been provided at 210 Tier-2 Vertical PoPs.

2.8.5. Other Connectivity Services

Based on the requirement of Government Departments, ELCOT provides Internet Lease Line, MPLS and VPNoBB connectivity.

2.9. Hosting and Allied Services

Under the National e-Governance Plan (NeGP), Tamil Nadu State Data Centre (TNSDC) has been established as a core and critical infrastructure for the roll-out and delivery of secured e-Governance services of the State.

TNSDC enables State Government Departments and their agencies to host their applications, services and Servers on a common, secured and controlled infrastructure aiming at ease of operation, integration and efficient management.

In addition to TNSDC Hosting Service, ELCOT is currently providing Disaster Recovery (DR), Cloud and IT Security services to Government Departments.

2.9.1. Tamil Nadu State Data Centre-1(TNSDC-1)

The State-of-the-Art Tamil Nadu State Data Centre-1 (TNSDC-1) is the first ISO certified State Data Centre in the country and is operational from 01.08.2011 with an overall budget outlay of Rs.138 crore. As of now, more than 180 Applications / Services are hosted in TNSDC-1 on co-location / co-hosting and cloud hosting model.

2.9.2. Tamil Nadu State Data Centre-2(TNSDC-2)

Since TNSDC-1 has been completely utilised, the second phase at a project outlay of Rs.74.70 crore, is ready to handle the further service requests.

2.10. Tamil Nadu Disaster Recovery Centre (TNDRC) at ELCOSEZ, Tiruchirappalli

In order to ensure business continuity for various critical e-Governance applications hosted in TNSDC not only on ordinary circumstances, but also during any disaster circumstance , a Disaster Recovery Centre in a different seismic zone for data and services, TNDRC, has been established at ELCOSEZ, Tiruchirappalli at an estimated cost of Rs.59.85 crore and it commenced its operation from 09.02.2018.

2.11. TN Cloud Computing Services

Cloud computing enables optimal sharing of system resources for e-Governance applications

with minimal management.TN Cloud has been established at an outlay of Rs.11.39 crore in TNSDC and is in operation from 01.03.2016. Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) are being offered. Currently, 81 Applications / Services have been hosted in TN Cloud.

In addition, to cater the growing needs of Government Departments at TNSDC and for providing Disaster Recovery facility to the Applications hosted in cloud environment in TNSDC, the expansion of cloud infrastructure is being undertaken at an outlay of Rs.9.98 crore.

In order to have specific identity for cloud setup at TNSDC, a trade mark "**Thamizh Megam"** has been registered with the Office of Controller General of Patents, Designs & Trade Marks.

2.12. Security Architecture for TNSDC

In order to ensure data protection of all the Government Applications / Services, the following high level security architecture framework measures are in place:

1. Security Information and Event Management (SIEM) tool.

2. Vulnerability Assessment & Penetration Testing (VAPT)

2.13.   Cyber Security Architecture For Tamil Nadu (CSA-TN)

As Cyber security is essential for maintaining all critical IT infrastructure of Departments, as well as e-Governance services of the State, Hon'ble Chief Minister of Tamil Nadu has made an announcement under Rule 110 of the Tamil Nadu Legislative Assembly Rules on 01.06.2018 for creation of CSA–TN by ELCOT in

collaboration with Centre for Development of Advanced Computing (C-DAC) at a cost of Rs.21.39 crore and it is under implementation process.

2.14. Scheme for Distribution of Laptop Computers to students

The dream of our students studying in Government and Government-aided Schools and Polytechnic colleges to own a laptop has been fulfilled *by* Government of Tamil Nadu's scheme of distribution of laptop computers free of cost. This Scheme was inaugurated by the then Hon'ble Chief Minister of Tamil Nadu on 15.09.2011. ELCOT is procuring laptop computers on the behalf of Special Programme Implementation Department.

Number of Laptop Computers supplied

Sl No.	Academic year	No. of Laptops procured	No. of Laptops supplied
1	2011-12	8,98,866	8,98,866
2	2012-13	7,56,000	7,56,000
3	2013-14	5,65,000	5,65,000
4	2014-15	4,96,999	4,96,999
5	2015-16	5,42,267	5,42,267
6	2016-17	5,94,460	5,94,460
7	2017-18, 2018-19 and 2019-2020	15,66,022	15,66,022

54,19,614 Nos. of Laptops have been supplied as on 15.03.2020.

2.15. e-Governance

ELCOT has been constantly engaged in successful implementation of e-Governance projects for various Government Departments to

increase the efficiency and effectiveness of their functioning.

ELCOT has rendered various services such as developing websites, application software, providing Consultancy Services, Facility Management Services and Maintenances Services to more than 75 Tamil Nadu State Government Departments.

2.15.1. Open Government Data Portal of Tamil Nadu

The Open Government Data (OGD) Portal of Tamil Nadu is intended to be used by Government Departments, Organizations and Public Sector to publish their datasets, documents and services for public use.

The State instance for OGD, Tamil Nadu has been created and is operational in the address https://data.tn.gov.in/.Currently, about 17,039 different datasets pertaining to 59 Government Departments / Agencies have been published into the TN OGD portal.

2.15.2. Permanent Enrolment Centres (PECs)

ELCOT is one of the enrollment agencies under the registrar, TNeGA, who is empanelled by the Unique Identification Authority of India (UIDAI) and has established 217 PECs to execute Aadhaar Enrolment activities in the State.

These centres are operational from 03.10.2016 and as on 31.01.2020, the total transaction count is about 50,23,586.

Samagra Shiksha is an overarching programme developed for the School Education Department with the broader goal of improving effectiveness in providing equal opportunities for learning and equitable learning. ELCOT is in the process of establishing 505 Aadhaar Enrolment centres across 385 Educational Blocks.

2.15.3. Amma Call Centre (ACC)

Amma Call Centre with toll-free number 1100 (24x7) was launched on 19.01.2016 and functioning in the URL

www.ammacallcentre.tn.gov.in. This enables the public to submit grievances at anytime and anywhere through mobile phone. The disposal of the grievance is also intimated to the petitioner by SMS.

2.15.4. Capacity Building

ELCOT has been playing an important role in supporting the training needs of Government Departments since June 2007. Adequate infrastructure facilities have been created at ELCOT, Perungudi, Chennai and at district level.

The training content primarily focuses on developing requisite knowledge and skills, and to bring better understanding of the e-Governance projects being rolled out and Application Software Training are conducted through the "Train the Trainer" programme. So far, 1,19,416 participants have benefited from various Government Departments across the State.

2.16. Networks

Video Conferencing

- Arrangement of Video Conferencing equipments by ELCOT for the Inauguration of various Department Government welfare schemes by Hon'ble Chief Minister.

- Provision of Communication equipments during the visit of VVIPs i.e. Hon'ble President, Hon'ble Vice President, Hon'ble Prime Minister of India and Foreign Leaders to the State of Tamil Nadu.

- Procurement of Video Conference systems by ELCOT for various Government Departments / Agencies.

- Supply and Commissioning of Studio based Video Conferencing system to Court complexes in Tamil Nadu by ELCOT.

2.17. CCTV Surveillance system

- Provision of CCTV (Closed Circuit Television) Surveillance system with accessories for

monitoring of examinations conducted by various Government Departments/Agencies.

- Installation and Maintenance of CCTV Surveillance system at Main Building and Namakkal Kavignar Maaligai, Secretariat with facility to monitor on 24 x 7 basis.

2.18. e-Notice board

- Supply of e-notice board at Madras High Court and Madurai bench of Madras High Court, Madurai in Tamil Nadu through ELCOT.

2.19. e-Clocks

- Supply of synchronized Digital clocks through LAN at Tamil Nadu Legislative Assembly.

2.20. Network Maintenance at Secretariat

- Maintenance of Secretariat Network (SECNET) on 24x 7 basis.

CHAPTER-III

COMMISSIONERATE OF e-GOVERNANCE AND TAMIL NADU e-GOVERNANCE AGENCY

1. Introduction

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

2. Objectives

i) To be the Chief Technology and Innovation Organization for the Government of Tamil Nadu.

ii) To support change management and transfer of ownership

iii) To Conceptualize and initiate various e-Governance initiatives and to stipulate standards for compliance.

iv) To assess and provide the common service needs of various Government Departments and to provide a cost effective and efficient solution.

v) To modify Governance in every Government institution of Tamil Nadu, such that these institutions become transparent, hassle-free and paperless.

vi) To create an ecosystem of academic institutions, research organizations, startups, funding agencies and eminent

individuals, to innovate, design and implement solutions for pressing governance issues.

vii) To build the soft infrastructure for smart governance and to help improve competitiveness of the State and make the State future ready.

viii) To support capacity building of all Government employees at all levels in Information Technology to enable efficient Governance.

ix) To create secure cyberspace for Government Departments.

3. Organization Structure

3.1. Centre of Excellence (CoE) in Emerging Technologies (CEET)

The Hon'ble Chief Minister in his reply to the Hon'ble Governor's Address in January 2019 announced the creation of a Centre of Excellence in Emerging Technologies in TNeGA. This CoE will bridge the knowledge gap between development and application of emerging technologies in Government Departments.

CEET is envisaged to act as a catalyst for diffusion of innovation in various Government Departments. It would provide a platform for collaborative partnerships with various stakeholders. It would facilitate collaboration among Government, Industry, Academia and

Non-Government organizations to bridge the gap between the public and the Government. CEET proposes to:

i) Find low cost scalable solution to Government problems.

ii) Establish and foster partnership with Government Departments, agencies, corporate entities, industry bodies and academic institutions working in emerging technologies.

iii) Define and promote best practices and standards followed across the globe in emerging technologies.

iv) Engage in capacity building, training and orientation of Government officers at various levels.

v) Reach out to other organizations offering similar, complementary or supplementary technologies.

vi) Organize development programmes, training courses, conferences, seminars, guest lectures and other related activities.

vii) Organize workshops in the areas of emerging technologies, invite innovative ideas and nurture Innovation talents.

viii) Generate research output in terms of working papers, industry papers, peer reviewed journal articles, conference presentations, etc.

ix) Perform R&D projects and undertake specific prototyping or development tasks.

x) Evolve reuse strategies and centralize the shared asset creation and consumption processes for the Government Departments.

3.2. State e-Mission Team (SeMT)

State e-Mission Team (SeMT) is one of the capacity building initiatives under the National e-Governance Plan (NeGP) of the Ministry of Electronics & Information Technology (MeitY), Government of India, to provide e-Governance expertise to State Governments. SeMT is funded by MeitY and is functioning under TNeGA.

3.3. District e-Governance Society (DeGS)

District e-Governance Societies have been constituted in all Districts. This Society is headed by the District Collector, except in Chennai, where the Commissioner, Greater

Chennai Corporation acts as its Head. It provides overall guidance to e-Governance projects at the District level.

3.4. Information Technology (IT) Cadre

To cater to the IT needs of all Government Departments IT Cadre has been created to standardize and implement e-Governance projects in an integrated and secured IT environment. IT Cadre includes Assistant System Analyst/ Assistant System Engineer, System Analyst/System Engineer, Senior System Analyst/Senior System Engineer.

4. Memorandum of Understanding

As a part of continuing technological innovation and upgradation programme, TNeGA has entered into an agreement with various

eminent academic and other non-academic institutions. The following MoUs have been signed so far:

    I.   MoU was signed between TNeGA and Anna University, Chennai to support and collaborate on research pertaining to analytics and emerging technologies viz., Blockchain, Internet of Things, Artificial Intelligence, Natural Language Processing (NLP)etc.

   II.   MoU was signed between TNeGA and Kerala Blockchain Academy (KBA) to conduct blockchain training programs through KBA.

III. MoU was signed between TNeGA and IIT Madras to bring together researchers, academics, policy makers, technologists and industry leaders to deliberate and provide technological solutions.

IV. MoU was signed between TNeGA and IIM Trichy to launch training and certification programs on emerging technologies for senior executives in various Tamil Nadu Government Departments.

V. MoU was signed between TNeGA and Great Lakes Institute of Management to conduct CSR studies and its impact related to various Government.

5. NamadhuArasu (MyGov)

MyGov is being implemented as an innovative platform to build a partnership between Public and Government with the help of technology for growth and development.

6. Activities of TNeGA

6.1. Tamil Nadu Blockchain Backbone "NambikkaiInaiyam"

NambikkaiInaiyam is the Tamil Nadu State Blockchain Backbone. It will be a State-of-the-Art blockchain platform that will allow Government Departments, public, start-ups, private sector enterprises and blockchain application developers of Tamil Nadu to connect, transact, build secure applications and design efficient workflows upon it.

This platform "**NambikkaiInaiyam**" will help to establish a single trusted source of truth that will be used to create an efficient and manipulation resilient system for Government processes. This will directly benefit the public of Tamil Nadu. NambikkaiInaiyam platform would offer **Blockchain as a Service (BaaS)** to Government Departments, public and private sector organizations. The Key features of this project are:

i. One of the largest blockchain rollout in the country.

ii. Seamless access to Government services – Anywhere, Anytime.

iii. Easy Blockchain account for public – (No need for physical document verification).

iv. Trusted, efficient and fast services to public.

This blockchain will be used by qualifying parties to build transparent, efficient and secure people-centric workflows. Enterprise-grade Government to Government (G2G) and Government to Citizens (G2C) products and services will be implemented using this infrastructure. It will be a single platform that can be used for developing and deploying blockchain applications for all Departments and Public sector enterprises within the State.

TNeGA has also taken cognizance of the potential of this technology and has been exploring its benefits and applications to multiple domains. NambikkaiInaiyam will provide a secure, scalable, digital signature-based authentication for electronic data, machines and personal information.

6.2. Zero Knowledge Proof based "Predictive Services Delivery"

Predictive Services Delivery is a pioneering attempt by the IT Department in re-imaging the existing Government services delivery mechanism, which relies on public approaching various Government offices and filling out several forms to get the services they need.

Our attempt is to create a situation where people don't have to approach the Government for any services instead the Government will reach out and proactively deliver its services at their doorstep.

6.3. Artificial Intelligence (AI) based ''Face Recognition System (FRS)''

An Artificial Intelligence (AI) based Face Recognition System developed by Tamil Nadu e-Governance Agency is one of the milestone in the area of e-Governance. This system enables easy handling of attendance and also reports using the available data. This system has been put in use in two Government Schools in Chennai and in IIM Trichy on a pilot basis. It will be

extended to other Government schools in a phased manner.

6.4. Artificial Intelligence (AI) based Crop Pest Detection and Mitigation Solution "Pest Identification System"

The TNeGA's Pest Identification System provides intelligent solution to farmers with pest diagnosis and sends remedial measures by analysing the photo of the pest infected crop uploaded by the farmer through Uzhavan App of Agriculture Department. It was launched by the Hon'ble Chief Minister of Tamil Nadu in the IT event CONNECT 2019.

6.5. Tamil Natural Language Processing (NLP) based "Smart Conversation Assistant" (Chat Bot - Anil)

Tamil Nadu e-Governance Agency has collaborated with Anna University to develop an automated virtual assistant tentatively called "Anil", which can converse in Tamil with people and guide them in obtaining Government services like Nativity Certificate, Income Certificate, Community Certificate etc. The software named "Anil" was launched by the Hon'ble Chief Minister of Tamil Nadu in the IT event CONNECT 2019. It has been developed for supporting Tamil and it is being developed to converse in English with people.

6.6. Drones as a Service (DaaS)

Drones are now finding practical uses in many Government applications. TNeGA provides **Drones as a Service (DaaS)** to various Departments of the State. The Departments can use drones to address relevant use cases in their domain, such as inspecting hard-to-reach infrastructures like electric power lines and sub-stations, bridges, dams and highway overpasses. Drones can fly over treacherous terrain to check on machinery in remote locations. They also can be used for aerial security reconnaissance of events where huge crowds gather, making them a vital tool in preventing any untoward incident.

TNeGA has conducted successful pilots with startups / technology partners for monitoring

transmission lines for Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) and monitoring water bodies for Greater Chennai Corporation on a pilot basis. It will be extended to other areas in a phased manner.

6.7. Bridging the Digital Divide - TNeGA YouTube Channel

An exclusive "TNeGA YouTube Channel" was launched by the Hon'ble Chief Minister of Tamil Nadu in CONNECT 2019 to guide the people in obtaining various Government services.

This channel has videos in Tamil, which explain the procedures on how to apply for online services such as Income Certificate, Nativity Certificate, Community Certificate, First Graduate

Certificate, Patta, Chitta, FMB Sketch, Unemployment Certificate etc.,

6.8. Digi Volunteers

'TNeGA Digi Volunteers' is a pioneering initiative of TNeGA that is for people who are passionate about technology and would like to contribute to Digital Transformation in Governance. The Digi Volunteers platform aims to create an interface for the healthy exchange of ideas and views of the public and technology experts to contribute to Digital Transformation of Tamil Nadu.

The mission of the TNeGA Digi Volunteers group is 'Helping people through Technology' in an effort to bridge the Digital Divide.

6.9. ''Safe & Ethical AI Policy'' of the State

In order to address challenges of powerful Artificial Intelligence (AI) technology, TNeGA is working on developing a "Safe and Ethical" policy for Tamil Nadu. This recommends the Six Dimensional framework **T**ransparency & Audit, **A**ccountability & Legal Challenges, **M**isuse Protection, **D**igital Divide & Data Deficit, **E**thics and **F**airness & Equity (TAM-DEF) for evaluation of AI based systems.

6.10. Tamil Nadu "Blockchain Policy"

Government of Tamil Nadu is bringing out the Tamil Nadu Blockchain policy. This policy will identify the important player that constitutes the Tamil Nadu Blockchain ecosystem and suggests a roadmap to enable them. It will highlight on

critical areas where we believe intervention by Blockchain can reap substantial benefits in e-Governance and have a significant positive impact on the lives of the public of Tamil Nadu.

6.11. Arasu e-Sevai Centres

Tamil Nadu e-Governance Agency (TNeGA) provides online services to public through e-Sevai centres. These centres have been established by Tamil Nadu Arasu Cable TV Corporation Ltd. (TACTV), Primary Agricultural Co-operative Credit Societies (PACCS), Village Poverty Reduction Committees (VPRCs), Post Tsunami Sustainable Livelihood Programme (PTSLP), Fisheries Department and Village Level Entrepreneurs (VLEs) to deliver the Government services to public at their doorsteps. As on 29.02.2020,

totally 12,831 Centres are functioning in Tamil Nadu as follows :

e-Sevai Centre Details			
S No	Agencies	Centres	Counters
1	TACTV	595	920
2	TACTV FRAN	1,104	1,104
3	PACCS	4,370	4,373
4	VPRC	4,269	4,364
5	PTSLP	8	8
6	VLE	2,335	2,335
7	Fisheries Department	150	150
Grand Total		12,831	13,254

List of services offered through Arasu e-Sevai Centres

Department	Services Name
Revenue and Disaster Management Department (No. of services – 38)	Income Certificate
	Nativity Certificate
	Residence Certificate

	Community Certificate
	First Graduate Certificate
	Deserted Woman Certificate
	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 Community (OBC) Certificate
	Small/Marginal Farmer Certificate
	e-Adangal
	Temporary Cracker License
	Issuance of Jain Minority Certificate

	Indira Gandhi National Old Age Pension Scheme
	Indira Gandhi National Widow Pension Scheme
	Indira Gandhi National Disability Pension Scheme
	Differently abled Pension Scheme
	Destitute Deserted Wives Pension Scheme
	Unmarried Women Pension Scheme
	Destitute Widow Pension Scheme
	Chief Minister's Uzhavar Pathukappu Thittam
	Grievance Day Petition

	Tamil Nilam- Full Field Patta Transfer
	Tamil Nilam – Joint Patta Transfer
	Tamil Nilam – Subdivision
	Tamil Nilam – Extract of A-Register
	Tamil Nilam – Extract of Chitta
Social Welfare and Nutritious Meal Programme (No. of services-7)	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
	Dr. Muthulakshmi Reddy Ninaivu Intercaste Marriage Assistance Scheme
	EVR Maniammaiyar Ninaivu Widow Daughter Marriage Assistance Scheme
	Moovalur Ramamirtham Ammaiyar Ninaivu Marriage Assistance Scheme
Police Department (No. of services – 8)	CSR Status
	FIR Status
	Online Complaint

	Registration
	Status viewing
	Vehicle Search
	View FIR
	Download Accident Case Document
	Lost Document Report
Adi-Dravidar & Tribal Welfare Department (No. of services – 4)	GoI Post Matric Scholarship for SC Students
	GoI Post Matric Scholarship for ST Students
	State Special Scholarship for Post Matric Students
	Higher Education Special Scholarship

	Scheme
Backward Classes, Most Backward Classes & Minorities Welfare Department (No. of services – 4)	Issuance of Post Matric Scholarship for BC students
	Educational Assistance to BC students in Professional Courses
	Educational Assistance to BC Graduates
	Educational Assistance to BC Polytechnic Students
Tamil Nadu Waqf Board (No. of service – 1)	Ulema Pension Scheme
Health and Family Welfare Department (No. of service – 1)	Pre-Registration of Pregnancies (PICME)
Directorate of Boilers	Registration of License

(No. of services – 5)	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.	NOC for MSB compliance

of services – 5)	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 Limited (TANGEDCO) (No. of services – 3)	Electricity Bill Payment
	Registration of New LT connection
	Payment for New LT Connection
Directorate of Employment & Training (No. of	Printing of Registration ID
	Application for Renewal

services – 4)	of Registration
	Application for Profile Updation
	Application for Registration
Directorate of Drug Control (No. of services -11)	Application for License to grant or renewal allopathic drugs
	Application for License to grant or renewal homeopathic medicines
	Application for License to grant or renewal restricted License (allopathic drugs)
	Application for License to grant or renewal specified in Schedule X drugs

	Application to obtain duplicate License
	Grant / Renewal of License for Manufacture of Drugs for sale – Allopathic Drugs
	Grant of License for Additional Section for applied products (Category)
	Grant of Test License
	Grant/Renewal of Loan License for manufacture of Drugs for sale – Allopathic Drugs
	Grant/Renewal of Repackaging License for Allopathic Drugs
	Grant/Renewal of

	License for Manufacture of Frugs for sale – Homeopathic Medicines
Energy Department (No. of services -2)	Issuance of Drawing approval
	Issuance of Safety Certificate
Greater Chennai Traffic Police (GCTP) (No. of service – 1)	Collection of Greater Chennai Traffic Police Challan Payment
Directorate of Fisheries (No. of service – 4)	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
	Tamil Nadu National Fisher women Savings Cum Relief Scheme
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	Tamil Nadu Regulations of Rights and Responsibilities of

service – 1)	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	**126**

6.12. Permanent Enrolment Centres (PECs)

Commissioner of e-Governance/Tamil Nadu e-Governance Agency (CeG/TNeGA) has been entrusted with the job of Registrar under

Unique Identification Authority of India (UIDAI) to carryout Aadhaar Enrolment through Permanent Enrolment Centres across Tamil Nadu.

Electronics Corporation of Tamil Nadu Limited (ELCOT) and Tamil Nadu Arasu Cable TV Corporation Limited (TACTV) were appointed as Enrollment Agencies of Tamil Nadu e-Governance Agency. As of now, Permanent Enrollment Centres (PEC) are operated at Secretariat, Ezhilagam, All Taluk offices, Head Quarters and Zonal offices of Greater Chennai Corporation by Tamil Nadu Arasu Cable TV Corporation(TACTV) whereas Electronics Corporation of Tamil Nadu (ELCOT) is operating the Permanent Enrollment

Centres at all the Collectorates, Municipalities/Corporation head offices (other than Chennai). Aadhaar enrollment is done free of cost to the public.

Aadhaar Enrollment & Aadhaar Generated Details for FY 2019-2020 as on 29.02.2020

Enrolment Agency	No of. Centres	Total no. of Enrolments (In lakh)	Aadhaar Generated from UIDAI portal (In lakh)
TACTV	318	3.6	1.9
ELCOT	215	2.5	1.6
Total	533	**6.1**	**3.5**

6.13. Know Your Government (KYG)

KYG will provide a single window access to information and services offered by the Government of Tamil Nadu to public and other stakeholders, as a mobile app based service.

6.14. Tiny URL (Uniform Resource Locator) Service – Ullangaiyil Sanridhazh

Tiny URL concept has been operationalized from 23.05.2017. Once, the application submitted through e-Sevai center is approved, a tiny URL will be sent to applicant's mobile number in SMS mode. With the help of internet, applicant can download their certificate without going to e-Sevai Centres.

6.15. Accessibility of Government ebsites and Standardization

All District websites of Tamil Nadu were revamped using the S3WaaS (Secure, Scalable and Sugamya Website as a Service) framework to make them responsive, accessible and adhere to Guidelines of Indian Government Websites (GIGW) and Security guidelines. It is

a website generating and deployment product hosted on the National Cloud of National Informatics Centre (NIC). It leverages technology to generate secure websites using (GIGW) compliant templates which are highly customizable and can seamlessly be deployed on a scalable software defined infrastructure. TNeGA has undertaken the standardization and accessibility of all Government websites in the above framework in a phased manner.

6.16. e-Taal (Electronic Transaction Aggregation and Analysis Layer)

e-Taal is a web portal of Government of India (www.etaal.gov.in) which disseminates e-Transaction statistics of National and State level e-Governance Projects. It receives

transaction statistics from web based applications periodically on near real-time basis and presents analysis of transaction counts in tabular and graphical form to give quick view of transactions done by various e-Governance Projects.

The total transaction of Tamil Nadu has been 68.80 crore as on 29.02.2020.

6.17. Tamil Nadu Geographical Information System (TNGIS)

A Geographic Information System (GIS) refers to a system where geographic information is stored in layers and integrated with geographic software programs so that spatial information can be created, stored, manipulated, analyzed, and visualized as a

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

So far, 29 Stake holder Departments and Agencies are part of this project.

i. In TNGIS Framework, 358 layers of Tamil Nadu are hosted.

ii. Role based Access provided for 504 Officials of various State Government Departments.

iii. 4837 Public users have registered Online Registration for G2C registrations.

7. IT Security Audit

TNeGA is carrying out the security audit of the Government Websites/ Applications engaging the Indian Computer Emergency Response Team (CERT-IN) empanelled vendors for the Government Departments once in a year. 53 websites have undergone security audit for the year 2019-2020 until January 2020.

8. Online Exam as a Service (EaaS)

TNeGA is providing Online examination system which can be used by various Government Departments to recruit for their vacancies in a shorter span of time and in a secured manner. It includes Pre-examination, Examination and Post examination activities.

So far, 2 Departments, namely, Environment and Forests Department and Teacher's Recruitment Board has used the system successfully and completed the recruitment process for 7128 vacancies in a secure and hassle-free manner. Around 12.97 lakh candidates have availed this services.

9. Engineering Admission / Counselling (TNEA)

The Higher Education Department conducted an Online counselling for candidates opting for Technical studies offered by institutions functioning under Directorate of Technical Education (DOTE). With TNeGA's technical assistance, software for Online counselling was developed.

10. e-Office

e-Office helps in creation, movement, monitoring and approval of files in Government offices electronically resulting in better utilization of manpower, thereby avoiding delays, leading to better governance.

Training has been given to all officials of Government Departments at Secretariat and e-office implementation is being done in phased manner.

11. Sustainable Development Goals (SDG)

Sustainable Development Goals (SDG) is achieving sustainable development in three dimensions – economic, social and environmental – in a balanced and integrated

manner. An intergovernmental set of 17 aspirational Goals with 169 targets, further elaborated through indicators are focused on measurable outcomes.

An application is developed by TNeGA to capture the data of Sustainable Development Goals and their associated targets from the Departments/boards. It covers social, economic and environmental dimensions of development and focus on ending poverty in all its forms and dimensions.

Apart from that, in respect of IT Department, in order to develop effective, accountable and transparent institutions at all levels, the following 4 indicators are being monitored for progress under SDG:

Sl. No.	Indicators	2019-20
1	Number of Government services provided online to public	126
	Other Department Services	64
2	Number of Department / Agencies integrated for Mobile Governance	291
3	Number of e-Transactions in e-Taal	68.80 crore
4	Number of Operational Common Service Centers	12831

12. Capacity Building

Capacity Building is one of the Mission Mode Projects (MMP) under National e-Governance Plan (NeGP), Ministry of Electronics and Information Technology (MeitY). The objective of Capacity Building scheme is to provide

professional support to political and policy level decision makers.

The following Training Programmes were conducted under Capacity Building Scheme, Openforge Workshop, Digi Locker Awareness Programme, Training on e-Office.

13. Technology Seminars

CEET conducts seminars, on emerging technologies and its application for governance. The following seminars have been conducted in the year 2019-20:

1. Driving Healthcare diagnostics using Artificial Intelligence
2. Policymaking and Regulation in Blockchain
3. Decentralised Asset Exchanges using Blockchain

4. Challenges and technical debts in real world - AI in practice

5. Developing an Intelligent Chatbot using NLP/AI and it's application

6. State of Permissionless and Permissioned Blockchains

7. Hyper Converged Infrastructure

8. How Digital Creates Innovative Strategies?

9. Virtual Reality & Haptics Technologies for Safety Training in India

10. Indian Space Programme Success Story

11. Leadership in the Era of Industrial Revolution 4.0

14. Software Applications developed by TNeGA for Various Government Departments

S. No.	Name of Department	Project Name	URL
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://tnlegalmetrology.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	https://onlineppacmda.tn.gov.in

		On-line Submission, Processing and Disposal of Planning Permission Applications, Building Permission Applications, Completion Certificate and Occupancy Certificate.	
5.	Environment and Forests Department	Development of Software Application for Conducting Online Examination for TNFUSRC	https://www.forests.tn.gov.in/pages/view/tn-forest-news
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 Pathukappu 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	Tamil Nadu Government Rental Housing Scheme	https://tnhb.tn.gov.in/pages/view/tngrhs
11.	Tamil Nadu Housing Board	Board Rental Management System	https://tnhb.tn.gov.in/
12.	Periyar University	Online admission Software for Distance education	http://pride.periyaruniversity.ac.in
13.	State Planning Commission	Sustainable Development Goals	https://tnsdg.tn.gov.in

		Monitoring Platform	
14.	Tamil Nadu Guidance Bureau	Biz Buddy portal	https://www.bizbuddy.tn.gov.in
15.	Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB)	Online application for new water connection for companies	https://cmwssbindust.in/WaterNew
16.	State Planning Commission	Web Monitoring System for State Planning Commission	https://pndschemes.tn.gov.in
17.	Labour and Employment Department	Development of web portal for Labour Department	http://www.labour.tn.gov.in
18.	Tamil Nadu e-Governance Agency	Cloud – based Asset Management System	https://ams.tnegov.in
19.	Tamil Nadu e-Governance Agency	e-District Project Phase I & II (e-Sevai)	https://tnesevai.tn.gov.in
20.	Tamil Nadu e-Governance	Online Examination	(i) Teachers Recruitment Board

	Agency	System – Pre Examination, Examination, Post Examination	TET Examination URL https://trbnet.onlineregistrationform.org/TNTRB/index.jst (ii) PG Computer Instructor URL tps://trbpgc.onlineregistrationform.org/TRBPGCI/ (iii) Tamil Nadu Pollution Control Board URL- https://tnpcb.onlineregistrationform.org/TNPCB/LoginAction loadIndex.action
21.	Tamil Nadu e-Governance Agency	State Portal	http://www.tn.gov.in/
22.	Tamil Nadu e-Governance Agency	e-District Project	https://edistricts.tn.gov.in:8443/certificates.csc/
23.	Tamil Nadu e-Governance Agency	Permanent Enrolment Centres (Aadhaar	https://uidai.gov.in/aadhaar dashboard/

		Enrolment for above 5 years category)	
24.	Tamil Nadu e-Governance Agency	SMS based Tracking System	https://services.mgov.gov.in
25.	Tamil Nadu e-Governance Agency	Online Patta Transfer	https://tamilnilam.tn.gov.in/CSC https://tamilnilam.tn.gov.in/Revenue/login.html
26.	Tamil Nadu e-Governance Agency	Tiny URL	https://tnegov.in/login
27.	Tamil Nadu e-Governance Agency	Tamil Nadu Geographical Information System	https://tngis.tn.gov.in
28.	Tamil Nadu e-Governance Agency	GIS Application for Public Works Department	https://tngis.tn.gov.in/pwd

Projects in Progress

S. No.	Name of Department	Project Name
1.	Tamil Nadu Guidance Bureau	Revamping of Investor portal
2.	Tamil Nadu Maritime Board	Development of Website
3.	Tamil Nadu Local Fund Audit	Development of Web portal
4.	Tamil Nadu Veterinary and Animal Sciences University (TANUVAS)	Student Management System Portal
5.	Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)	Development of Website
6.	Public Department	Development of Web portal for inventory management
7.	Entrepreneurship Development And	Development of IEDP Portal

		Innovation Institute (EDII)	
8.	Poompuhar	Development of Data Collection App
9.	Finance Department	Development of Finance Department Companies Tracking System
10.	Law Department	Development of Application for Registration and Renewal of Notary
11.	Tamil Nadu e-Governance Agency	Development of Digital Readiness portal
12.	Tamil Nadu e-Governance Agency	Single Sign On
13.	Tamil Nadu State Marketing Corporation (TASMAC)	End to End computerization
14.	Government examinations Directorate	Development of Web Portal
15.	Directorate of Employment and Training	Development of Online skill assessment module

16.	Department of Sericulture	End to End Computerization
17.	Commissionerate of Land Administration	Computerization of Land Administration Procedure
18.	Tamil Nadu State Agricultural Marketing Board	End to End Computerization
19.	Tamil Nadu Co-operative Society	End to End Computerization
20.	Tamil Nadu Text Book and Education Service Corporation	End to End Computerization
21.	Adi – Dravidar and Tribal Welfare Department	End to End Computerization
22.	Tamil Nadu Motor Vehicles Maintenance Department	End to End Computerization
23.	Chennai Metropolitan Water Supply And Sewerage Board	End to End Computerization

24.	Tamil Nadu Handicrafts Development Corporation Ltd.	End to End Computerization
25.	Unorganized Workers Welfare Board	End to End Computerization
26.	Tamil Nadu Housing Board	Development of Tamil Nadu Government Rental Housing Scheme Portal
27.	Directorate of Town and Country Planning (DTCP), Directorate of Town Panchayat (DTP), Greater Chennai Corporation(GCC) and Commissionerate of Municipal Administration (CMA)	Development of State Wide Single Window Web Portal

28.	Directorate of Town and Country Planning (DTCP)	Development of Website
29	Tamil Nadu Waqf Board	End to End computerization
30.	Tamil Nadu State Legal Services Authority	Development of website for Mediation Centre
31.	Backward Classes, Most Backward Classes & Minorities Welfare Department	Development of Website
32.	Social Welfare and Nutritious Meal Programme Department	Development of Web Portal
33.	Environment and Forests Department	End to End Computerization

34.	Department of Food Safety and Drug Administration	Development of Web Portal
35.	Tamil Nadu State Licensing Authority - Indian Medicine	Development of website
36.	Medicinal Plant Farms and Herbal Medicine Corpn Ltd (TAMPCOL)	Development of Mobile App & Web Application
37.	Government Museum	Development of Online Booking Portal
38.	Tourism, Culture and Religious Endowments Department	Development of Web portal, Mobile App and SEO
39.	Tamil Nadu Skill Development Corporation	Development of Skill Management Portal

15. Hon'ble Chief Minister's Award for Excellence in e-Governance for Students

Government of Tamil Nadu has announced Chief Minister's Award for Excellence in e-Governance" to encourage and create an awareness on e-Governance among the youth, Students and e-Governance enthusiasts. The awards were given by Hon'ble Minister for Revenue and Disaster Management & Information Technology at CONNECT 2019.

16. EczITe-2019

EczITe-2019 had been jointly organized by Information Technology Department, Government of Tamil Nadu and FICCI on 4th October 2019 at Chennai.

CHAPTER - IV
TAMIL NADU ARASU CABLE TV CORPORATION LTD

1. Introduction

"Arasu Cable TV Corporation Ltd" was formed under the Companies Act, 1956 on 04.10.2007. Before the advent of the Arasu Cable TV Corporation, the industry was dominated by few private Multi System Operators (MSO) who were charging exorbitant rate of subscription from the Cable TV operators and the public. In May 2011, the Hon'ble Chief Minister of Tamil Nadu revamped Arasu Cable TV Corporation to provide livelihood to Local Cable TV Operators (LCOs) and also provide high quality Cable TV service at an affordable cost to the public. The Corporation was then renamed as the "Tamil Nadu Arasu Cable TV Corporation Limited" (TACTV).

The TACTV has also been established Arasu e-Sevai centers to provide Government to Citizen (G2C) services besides providing Internet Services.

2. Analog Regime

The Hon'ble Chief Minister of Tamil Nadu announced on the floor of the Assembly on 30-08-2011 that TACTV would provide quality services at an affordable cost of Rs.70/- (100 channels) being the monthly subscription payable by the subscribers to the LCOs of which Rs.20/- would be paid to TACTV by the LCOs. Accordingly, TACTV had provided Analog Cable TV Service to subscribers with 100 Channels at an affordable cost of Rs.70/- per month.

TACTV established its Head Ends for providing Cable TV Services at five places i.e Chennai, Coimbatore, Thanjavur, Tirunelveli and Vellore. In addition, control rooms were taken on lease from the District Cable Operators and Taluk Cable Operators in another 77 places to provide

Analog Cable TV services of the Corporation throughout Tamil Nadu except Chennai from 02.09.2011 and from 20.10.2012 in Chennai City.

Due to the continuous efforts of TACTV, the number of subscribers steadily increased from 4.94 Lakh as on 02.09.2011 to 70.52 Lakh connected through 26,474 Local Cable TV Operators (LCOs). As per the orders of the Ministry of Information and Broadcasting (MIB), Government of India, transmission of Analog cable TV services had been discontinued by TACTV from September,2018

3. Digital Regime

The Ministry of Information & Broadcasting, Government of India has mandated that the Cable TV operations have to be digitalized in four phases all over the Country, with the last phase deadline stipulated as 31.03.2017. In accordance, TACTV as an MSO had applied for DAS (Digital Addressable System) license for Chennai Metro

Area on 05.07.2012 and for the rest of Tamil Nadu on 23.11.2012.

TACTV was provided with provisional DAS License on 17.04.2017 for entire Tamil Nadu. TACTV is the first State Government Undertaking in the Cable TV industry to get DAS License in the Country. TACTV procured 36 Lakh Standard Definition Set Top Boxes (SD STBs) and 40,000 High Definition Set Top Boxes (HD STBs) by floating Global Tender. TACTV upgraded its existing MPEG2 Digital Head End at Chennai to MPEG4 Digital Head End for Digital Transmission. The Hon'ble Chief Minister of Tamil Nadu inaugurated the upgraded MPEG4 Digital Head End at Chennai and started the distribution of free Set Top Boxes on 01.09.2017.

Till date, 36.40 lakh Digital Standard Definition and High Definition Set-top-boxes have been distributed to the subscribers through 16,702 Local Cable TV Operators (LCOs). The Hon'ble Chief Minister launched High Definition

(HD) cable TV service in Chennai, Salem, Coimbatore, Tiruchirappalli and Madurai on 02.07.2018.

4. The New Tariff Order of Telecom Regulatory Authority of India (TRAI)

The new Tariff order of TRAI has allowed a maximum of Rs.130+GST as Network Capacity Fee (NCF) per subscriber for 100 Free to Air Channels (FTA) and Rs.20+GST for every additional 25 Channels. Accordingly, TACTV announced to provide 142 Free to Air Channels and 49 pay Channels at Rs.220+GST on 01.02.2019.

On 31.07.2019, Hon'ble Chief Minister announced the reduction of Digital Cable TV subscription from Rs.220+GST to Rs.130+GST with 139 Free to Air Channels and 52 pay Channels and the same was implemented from 10.08.2019. This is India's one of the lowest Digital Cable TV subscription rate. Out of the

subscription fee of Rs.130+GST, the Local Cable Operator gets Rs.70+GST and TACTV gets Rs.60+GST.

5. Arasu e-Sevai Centers

TACTV has established Arasu e-Sevai Centers to provide Government to Citizen Services as announced by the Hon'ble Minister for Information Technology on the Floor of the Assembly on 04.08.2014. At present, TACTV is operating 595 Arasu e-Sevai centers across the State. The Citizen Centric Services of Government Departments (both Central and State) made available by TNeGA are provided through Arasu e-Sevai centers. Provisions have also been made to assist Tamil Nadu Public Service Commission (TNPSC) to upload the Certificates of shortlisted candidates and take up printing works of identity cards pertaining to Pensioners, Family Pensioners, officers and staff of Secretariat and also printing

of replacement Electoral Photo Identity Card (EPIC).

During the past 3 years 1,45,76,806 transactions have been done through Arasu e-Sevai Centres.

Arasu Cable TV e-Sevai Centres - Transaction Details
Sl. No	Year	e-District Transaction	TNEB Bill Payment	Metro Water Tax	APNA Services	TNTESC	EPIC	GCC Tax services	Printing of Pensioners ID card	Total
1	2017-2018	5016258	42272	24409	737323	2277	1640675	176414	0	7639628
2	2018-2019	2471669	24672	14457	0	10615	740703	205212	38418	3505746
3	2019-2020	2813924	5291	82	0	77039	398455	102292	34349	3431432
	Total	10301851	72235	38948	737323	89931	2779833	483918	72767	14576806

6. Arasu e-Sevai Centres on a Revenue Sharing Model

To expand the reach of Arasu e-Sevai Centres, TACTV floated an Expression of Interest (EoI) to empanel interested Private Internet Browsing centers to act as franchise of Arasu e-Sevai centres in urban areas on Revenue Sharing model. Accordingly, 1104 applicants were given User ID and Passwords to provide

Government services. This was launched by the Hon'ble Chief Minister on 27.02.2019.

7. Permanent Enrolment Centres (PECs) for Aadhaar

The Government of Tamil Nadu appointed Tamil Nadu e-Governance Agency (TNeGA) and Commissionerate of e-Governance (CeG) as Registrar for conducting Aadhaar enrolment in Tamil Nadu. Accordingly TNeGA authorized TACTV to act as enrolment agency for Aadhaar enrolment.

Performance of TACTV PECs
S. No	Year	Total No of New Enrolment	Total No of Updation	Total
1	2017-2018	10,41,427	15,82,526	26,23,953
2	2018-2019	4,80,005	33,55,261	38,35,266
3	2019-2020	2,54,856	13,94,026	16,48,882
	Total	17,76,288	63,31,813	81,08,101

At present, there are 318 TACTV PECs functioning with 510 counters in all Districts. In

addition to the above, one "Mobile Aadhaar Enrolment Unit" is functioning in the limits of the Greater Chennai Corporation to enable the Persons with Disability for Aadhaar enrolment.

8. Internet to Every Household

TACTV obtained Internet Service Provider (ISP) License (Class B) from the Department of Telecommunications, Government of India on 14.09.2015. The Hon'ble Chief Minister announced "Internet to every household" scheme and the same was launched on 01.03.2016. In order to expand business exponentially, TACTV has proposed to form fully owned subsidiary company for internet related services to the public and enterprise customers.

9. Set-Top Boxes Procurement

TACTV is aiming to increase its subscriber base by procuring additional 10 lakh Set-Top Boxes (STBs) in the coming years.

CHAPTER - V

TAMIL VIRTUAL ACADEMY

1. Introduction

Tamil Virtual University (TVU) was established as per the Tamil Nadu Co-operative Societies Act, 1983 and it is functioning under the administrative control of the Information Technology Department. On 16th July 2010, TVU was renamed as Tamil Virtual Academy (TVA). The main aim of the TVA is to provide Tamil Education through Internet for the Tamil Diaspora and to promote Tamil from alphabet to research.

2. Objectives

1. To provide information about Tamil culture and civilization to the Tamil Diaspora across the globe and others who are interested in Tamil.

2. To provide Diploma, Degree certificates through Tamil University, Thanjavur.

3. To compile Tamil learning materials.

4. To promote Tamil Computing.

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3. Academic Programmes

TVA offers Primer, Certificate Course, Higher Certificate Course, Diploma, Higher Diploma and Degree (B.A. Tamilology) Courses. The details are as follows:-

3.1. Primary Course

Primary course lessons are designed in multimedia with pictures, sceneries, pictorial stories, poems and songs.

3.2. Certificate Course

Certificate Courses (equivalent to classes 1 to 6)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)

3.3. Higher Certificate Course

Higher Certificate Courses (equivalent to classes 7 to 12)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)

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. So far **19,463 candidates** from various countries have registered for the different courses offered by TVA.

The above academic programmes are provided through 101 contact centres in 21 countries. So far 11,601 students have passed various levels. For example 219 students from

France, 2294 students from Sri Lanka, 2378 students from Sultanate of Oman, 2949 students from USA have successfully completed the examinations.

The contact details of all 101 contact centres are available in the TVA website [www.tamilvu.org.](www.tamilvu.org)

4. e-Asiriyar Project

TVA is imparting Tamil education through internet to the Tamil people living all over the world. e-Asiriyar project is intended to modernize the certain contents by developing an integrated learning pilot platform which shall concentrate/focus in the areas of the teaching and learning of Tamil language in the global diaspora using current technologies such as 3D-animations, Virtual board and Virtual Reality (VR) by employing Machine Learning (ML) and Artificial Intelligence (AI). Implementation of this project shall enable the children to make them learn in an integrated approach.

5. Separate Wing for Tamil Computing

Most of the activities of TVA are based on computing technology. Hence orders have been issued for creation of a separate wing for Tamil Computing at a recurring cost of Rs.50 lakh per annum. The following activities shall be carried out in the Tamil Computing Wing.

1. Tamil Computing Propagation
2. Image Processing and Optical Character Recognition (OCR)
3. Use cases and tools development
4. Computational Linguistics.

6. Digital Library

TVA has created a Digital Library (www.tamildigitallibrary.in) with collection of rare documents, books and periodicals, at a cost of Rs.1 crore and the same was inaugurated by the Hon'ble Chief Minister on 11th October 2017. Currently, 27,860 books and periodicals are online in the Digital Library in MARC21 format.

7. Digitization and Cataloguing of Palm-Leaf Manuscripts

Palm-Leaf Manuscripts available in the Dr.U.V.SwaminathaIyer Library, Directorate of Indian Medicine & Homeopathy and the International Institute of Tamil Studies, Chennai, convey the knowledge about the land, people, education, medicine, culture, etc., of a bygone era. Digitization and cataloguing of the above Palm-Leaf Manuscripts are being undertaken at a cost of Rs.1.05 crore. So far, 7,20,360 Palm-Leaf manuscripts have been digitized and catalogued.

8. Tamilar Tagavalaatruppadai

"Tagavalaatruppadai" scheme contains 70,600 images of Archaeological & Historical sites, Monuments, Excavations, Inscriptions, Religious places, Sculptures, Coins, Copper Plates and Paintings which were captured as photographs and uploaded in the website with necessary

metadata in standard format. Further Documentation of archaeological & historical sites with images and updating of these in the website are under progress.

9. Monthly Lecture Series

In order to propagate Tamil Heritage, Art and Culture, TVA organizes monthly lecture series through renowned scholars and experts from various fields of knowledge. The lectures are recorded and webcasted via TVA website. So far, 56 lectures have been organized.

10. Tamil Computing

TVA is an Institutional member of the Unicode Consortium, USA on behalf of the Government of Tamil Nadu. Further, TVA promotes research in Tamil Computing using the Tamil Software Development Fund (TSDF), develops basic Tamil language database and related Tamil software tools, Unicode fonts, etc.

TVA also certifies Tamil Software and Tamil computing tools developed by public.

11. Tamil Text and Speech Computing Tools

Tamil Text and Speech Computing Tools are being developed by TVA. It is divided into two parts (i) **Tamil Grammar Checker:** This tool will highlight the errors in the text and also offer suggestions. The Grammar Checker will be useful to children as well as adults to learn and use appropriate vocabulary and grammatical rules. (ii)**Speech Processing Tool:** This tool will also be developed as an assistive aid for the persons with visual disability, to read and write with ease.

12. Sentence Patterns, Structures and Rules in Tamil for Machine Translation

The project "**Sentence Patterns, Structures and Rules in Tamil for Machine Translation"** is under progress**.** The aim of the project is to identify sentence patterns,

structures and rules in Tamil as is classified in the English language.

13. Development of New Syllabus

Based on popular demand from the diaspora, the Academic Syllabus of TVA are being redesigned.

14. Kani Tamil Peravai – A Forum for Tamil Computing

"Kani Tamil Peravai" has been created in higher educational institutions across Tamil Nadu, to promote Tamil Computing in the Higher Educational Institutes.

15. Tamil Perungkalanjiyam – Tamil Mega Encyclopedia Project

TVA collects Tamil content and develops "**Tamil Perungkalanjiyam**"in the web. More than 84,000 Tamil articles from the field of agriculture, fisheries, chemistry, biology, physics etc. have been received and uploaded in the TVA website**.**

16. Localization of Khan Academy's Educational videos

Khan Academy is an organization located in USA., which had created more than 8000 educational videos in English relating to Subjects like Mathematics, Science, History, Arts etc.,

Tamil Virtual Academy (TVA) has signed a Tri-partite agreement and made a Memorandum of Understanding (MoU) with Khan Academy and Vetrivel Foundation in USA to translate the above videos in to Tamil so as to help the Tamil Students. Initially 1000 videos have been taken up and the work of translation and voice over is currently under progress at an expenditure of Rs.12 lakh.

17. Creative Common Initiatives

As per Creative Commons for sharing academic knowledge in Tamil, more than 27,860 books, periodicals and Tamil related works (Ph.D. Theses, Research Articles etc.) of Tamil Development Department and Tamil University's

Publications have been uploaded in the TVA website.

CHAPTER - VI

TANFINET CORPORATION

1. Introduction

Tamil Nadu FibreNet Corporation (TANFINET) is a Public sector undertaking of the State Government implementing BharatNet and TamilNet projects. BharatNet project aims to provide a minimum bandwidth of One Gbps to each of the 12,524 Village Panchayats of the State. The TamilNet will be used to connect the urban areas of the State.

BharatNet and TamilNet are to be integrated and formed as Integrated Digital Infrastructure (IDI) of the State by this 12,524 Village Panchayats, 528 Town Panchayats, 121 Municipalities and 15 Corporations will be provided with high speed and low latency bandwidth to enable connectivity to all citizens and institutions.

2. BharatNet

Hon'ble Chief Minister announced under Rule 110 of the Tamil Nadu Legislative Assembly Rules, on 14.09.2015, that the BharatNet Scheme of Government of India will be implemented in Tamil Nadu through a State-led Model and a Special Purpose Vehicle (SPV) named "Tamil Nadu FibreNet Corporation Limited" will be set up for the purpose.

Accordingly, TANFINET was incorporated under the companies Act, 2013 on 08.06.2018. TANFINET will execute, operate and maintain the BharatNet project in Tamil Nadu to connect 12,524 Village Panchayats of the State with a minimum scalable bandwidth of 1 Gbps.

Government of India approved DPR in Revised Linear Architecture at a cost of Rs.1815.31 Cr on 19.09.2019. The project will be completed before March 2021.

3. TamilNet

Hon'ble Chief Minister announced on the floor of the Legislative Assembly under Rule 110 of the Tamil Nadu Legislative Assembly Rules, on 14.07.2017, that a "scheme called TamilNet will be implemented to connect all the Corporations, Municipalities and Town Panchayats of the State through high speed bandwidth using optical fibre network, thereby enabling the urban citizens to reap the benefits of the Digital Revolution and avail the services of Government Departments at their doorsteps.

The DPR for the TamilNet has been prepared to use the fibre networks of TANTRANSCO for building the TamilNet and integrating the BharatNet with TamilNet for the Integrated Digital Infrastructure.

4. Network Architecture for the Integrated Digital Infrastructure

Integrated Digital Infrastructure (IDI) is a network across Tamil Nadu to be built by integrating BharatNet and TamilNet. The infrastructure is capable of reaching all households in urban and rural areas and capable of delivering high speed, scalable bandwidth.

The Integrated Digital Infrastructure is a layered network is designed with technologies like DWDM (Dense Wavelength Division Multiplexing), MPLS (Multiprotocol Label Switching) and controlled through SOC (Security operations centers), OSS (Operational support system).

The IDI and the associated centralized facility are inherently capable of supporting the realization of "Citizen Centric Governance Vision", in Compute, Storage, and Communication.

5. Sustainable Development Goals (SDG)

Sustainable Development Goals (SDG) is achieving sustainable development in three dimensions – economic, social and environmental – in a balanced and integrated manner. An intergovernmental set of 17 aspirational Goals with targets, further elaborated through indicators are focused on measurable outcomes.

TANFINET Corporation is implementing projects, developing Information and Communication Technology infrastructure in the State. Through its TamilNet and BharatNet projects, TANFINET Corporation will provide a robust infrastructure which will enable service providers to provide ubiquitous digital connectivity to all by March, 2021.

CHAPTER - VII

ICT ACADEMY OF TAMIL NADU (ICTACT)

1. Introduction

ICT Academy of Tamil Nadu is a Joint Initiative of Government of India, Government of Tamil Nadu and Industries. ICT Academy of Tamil Nadu (ICTACT) is a pioneering venture under the Public - Private - Partnership (PPP) model that endeavors to train the College/University teachers and students in the areas of Information & Communication Technology, thereby making the students industry-ready.

ICT Academy of Tamil Nadu is a non-profitable autonomous organization focusing to improve the quality of students graduating from various institutions in Tamil Nadu, to make them industry-ready and immediately employable in the ICT industry.

The Academy is governed by an autonomous Board of Governors with representatives from the

State Government of Tamil Nadu and the leading companies in the ICT industry.

2. Activities

ICTACT's activities cover several major areas as listed below:-

2.1. Faculty Development

➢ 2387 faculty members have been trained through 91 Faculty Development Programs in the State of Tamil Nadu.

➢ 8 Technology Conclaves were conducted, benefitting 835 faculties across the State of Tamil Nadu.

2.2. Skill Development

➢ Trained and Certified 2000 Graduating students in Advanced IT / ITeS as part of Employability Skill Program approved by TNSDC, Government of Tamil Nadu.

➢ Trained and Certified 750 Government, 19 Autonomous College Graduating students in

BFSI,Telecom, Retail & IT / ITeS as part of Employability Skill Program approved by TNSDC, Government of Tamil Nadu.

➢ Trained 80 girl children in 4 Social Welfare Homes of Tamil Nadu approved by Social Welfare & Nutritious Meal Scheme Department.

➢ Trained and Certified 7000 Graduating students on employability skills from rural colleges as part of corporate CSR / institutional funding.

2.3. Entrepreneurship Development

➢ Conducted Entrepreneurship Awareness program for 13357 students in 42 colleges across Tamil Nadu.

2.4. Youth Empowerment

➢ ICT Academy Youth Talk – Tamil Nadu 2019: "Largest Talkathon of India"

➢ Conducted ICT Academy Youth Leadership Summit 2019 at Coimbatore benefitting 3000 students from across Tamil Nadu.

3. Research and Publications

ICT Academy of Tamil Nadu publishes 5 peer-reviewed scholarly Journals. These international journals are highly 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)

4. Digital Empowerment

ICT Academy being an Assessment and Certification Agency for Pradhan Mantri Gramin Digital Saksharta Abhiyaan [PMGDISHA], a scheme of Government of India. In 2019 13,29,200 candidates have been Assessed and Certified.

5. Bridge – Largest Industry Institute event

ICT Academy BRIDGE 2020, the event that connects government policy-makers, industry experts and academic leaders, will be focusing on the theme "Augmenting Skills, Accelerating Growth" to set an agenda for leaders to help people upskill and future-proof themselves, which is going to be the defining challenge of our time. The conference is a platform where visionaries lay out their blueprint for the right skills mix that would make existing and upcoming workforce to augment rather than compete with technology.
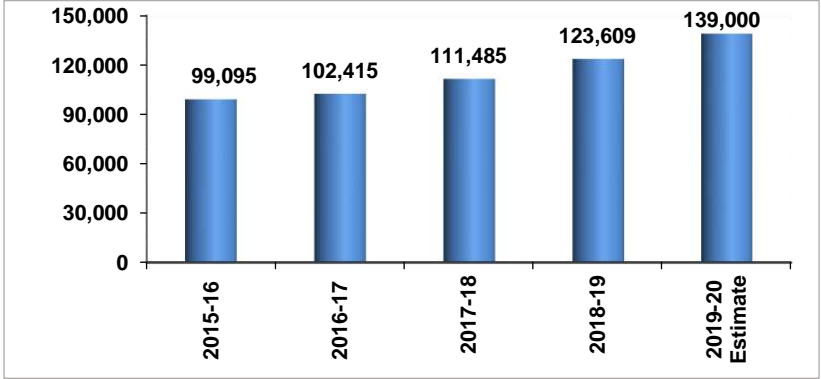
ICT Academy organized 15 Conclaves and Seminars across various locations of Tamil Nadu during 2019-20, addressing the Academic Fraternity and Industry with an objective to bridge the industry academia skill gap.

R.B. UDHAYAKUMAR
Minister for Revenue and Disaster
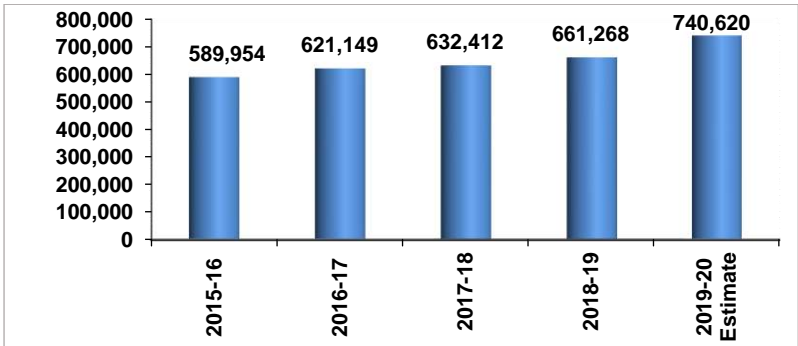**Management and Information Technology**

Exports made by IT/ITeS companies in Tamil Nadu

Value in Rs. Crore

Year	Value
2015-16	99,095
2016-17	102,415
2017-18	111,485
2018-19	123,609
2019-20 Estimate	139,000

Source: STPI and Ministry of Commerce

Employment by IT/ITeS Companies in Tamil Nadu

Year	Value
2015-16	589,954
2016-17	621,149
2017-18	632,412
2018-19	661,268
2019-20 Estimate	740,620

Source: STPI & Ministry of Commerce

ELCOSEZ- Sholinganallur, Chennai

M/s. Ford, ELCOSEZ, Chennai

M/s. HCL, ELCOSEZ, Chennai

M/s. Cognizant, ELCOSEZ, Chennai

M/s. WIPRO, ELCOSEZ,Chennai

M/s. WIPRO, Vilankurichi, Coimbatore

M/s. TPCL, Vilankurichi, Coimbatore

Figure-3 :Proposed ELCOT IT Tower,
Vilankurichi, Coimbatore

ELCOT IT Building, Ilandhaikulam, Madurai

M/s. HCL, Ilandhaikulam, Madurai

ELCOT IT Building, Vadapalanji, Madurai

ELCOT IT Building, Navalpattu,Trichy

Proposed ELCOT IT Building, Navalpattu, Trichy

M/s. Syntel International Pvt. Ltd (M/s. Atos Syntel)
Gangaikondan, Tirunelveli

ELCOT IT Building, Gangaikondan,
Tirunelveli

ELCOT IT Building, Jagir Ammapalayam, Salem

ELCOT IT Building, Viswanathapuram, Hosur
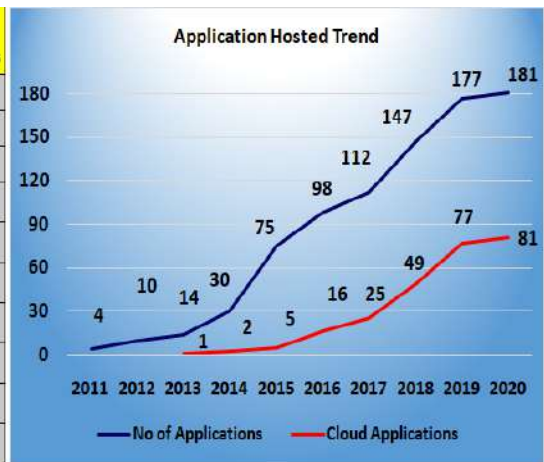
Start-up Warehouse, Chennai
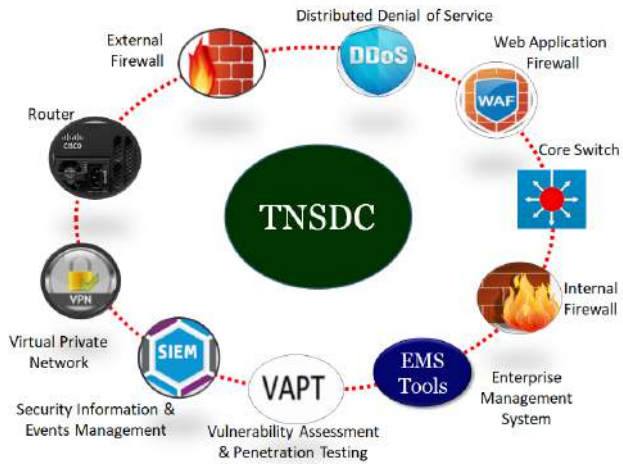

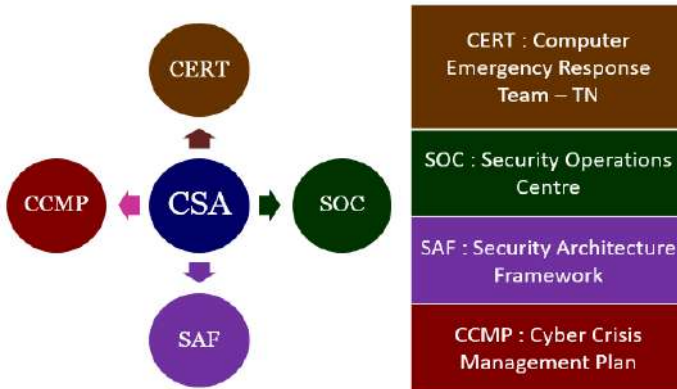**TNSWAN Network Operations Centre**

TNSWAN Network Room

S.No	Year	No of Applications	Cloud Applications
1	2011	4	
2	2012	10	
3	2013	14	1
4	2014	30	2
5	2015	75	5
6	2016	98	16
8	2017	112	25
9	2018	147	49
10	2019	177	77
11	2020	181	81

Application Hosted Trend

TNSDC-2

CSA - ARCHITETURE

Month Wise Transaction Count of Services Offered Through eSevai Centers (2019-2020)

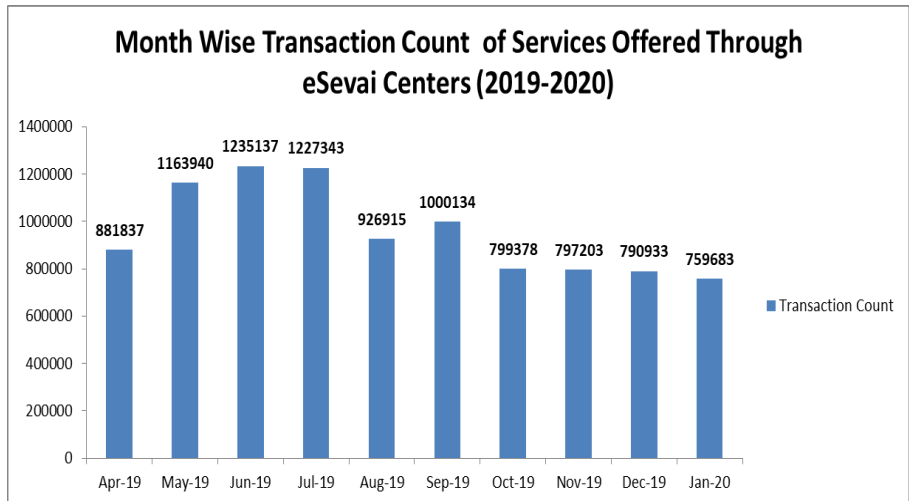| Month	Transaction Count
Apr-19	881837
May-19	1163940
Jun-19	1235137
Jul-19	1227343
Aug-19	926915
Sep-19	1000134
Oct-19	799378
Nov-19	797203
Dec-19	790933
Jan-20	759683

Month wise Transaction count of services offered through Arasu e-SevaiCentres

Inauguration by Hon'ble Chief Minister during CONNECT 2019 event.

Speech by Hon'ble Minister for Revenue and Disaster Management and Information Technology Department during EczITe 2019 event.
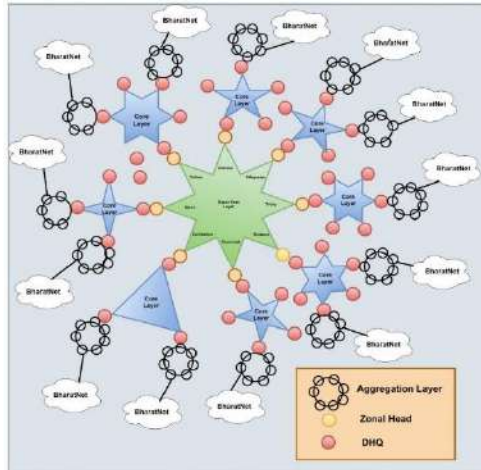
Website of Digital Library

Website of Tamilar "Tagavalaatrupaadai"

The schematic diagram of Integrated Digital Infrastructure