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Informatics

An e-GOVERNANCE PUBLICATION FROM NATIONAL INFORMATICS CENTRE

- e-SHRAM
- PBOX
- Govt. Email Service
- Kerala State
- Howrah District, WB
- The Nilgiris District, T.N.
- Parbhani District, Mah.
- Securing Endpoints

p 20

Infocus

Blockchain Technology

Driving the Next Generation eGovernance Applications

HAPPY new year 2022

एनआईसी NIC

Digital India
Power To Empower

Informatics

Volume 30 No.3, January 2022

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Editorial

Humans have always been keen to devise multiple uses for a technology, to maximize the gains from adopting any new technology. Blockchain is one such technology that has found various applications such as for payments, supply chain, identity management, and secure data sharing among others. Governments in digitally aware nations are putting to best use blockchain technologies that help reduce costs by reducing redundancy, streamlining processes, decreasing audit overheads, enhancing security, and ensuring data integrity. Additionally, such technologies are enabling the transparent sharing of resources with citizens, which helps to boost the trust of people.

We are glad to present you an interesting article on **Blockchain Technology**, its successful usage and advancements by NIC as the cover story article of this issue. We have an array of interesting articles such as the information technology success stories of **Kerala** briefly covered in the State in Focus section, and featuring three districts; **Howrah of West Bengal, The Nilgiris of Tamil Nadu and Parbhani of Maharastra**. **e-SHRAM** and **PBOX** are the special Application Products featured under eGovernance Products and Services section. The Appscape section covers **Ente Thai, Pauti, IFMS Delhi, Crop Doctor, VPMDP, Aarogya Sewa, Mobile District Directory (mDD), mSevanam, JAGRUTI** and **Ente Ration card**, which are the mobile apps which were recently launched or released with the support of NIC in the various States of India. The regular sections such as Accolades and In The News bring you some interesting news in this special edition. Further, this issue is special to us as our Director General, Dr. Neeta Verma shares some important points to ponder as we celebrate a brand new year, 2022.

Behind the scenes, we the team Informatics continuously enhance the publication by improving the quality, content, and design. Your feedback and suggestions are valued most. It would be much appreciated if you could take out some time to write to us your opinion and suggestions which may be addressed to **editor.info@nic.in**

Wish you a very happy new year and splendid, productive and purposeful days ahead. Happy reading, and please take care, stay healthy and safe.

-Editor

Dr. Neeta Verma

Director General
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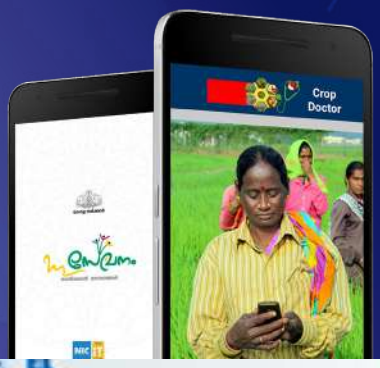
सत्यमेव जयते
Ministry of Electronics
& Information Technology
Government of India

As we all embark on our journey to deliver the best of our abilities in 2022, it is also time that we look back and reflect on how we made an impact in 2021. At NIC, our focus has always been towards delivering the best of citizen centric services, keeping in mind on how to bring in transformational change and bridge the digital divide. With solutions focusing on various areas such as agriculture, healthcare, education, transport, visa & immigration, finance and Judiciary to name a few, we are at the cusp of a digital transformation which is propelling technological innovations around us.

Despite the tough circumstances created by the pandemic, we were able to create moments and milestones that matter. In the year 2021, Over 2 lakh VC sessions were conducted, 1.25 crore Aadhaar based authentications were done daily, 224 Cr. Man days were facilitated through NREGASoft, 16 lakh cr. amount transacted through PFMS, 90 lakh CBSE certificates were added to blockchain and many more. NIC is also supporting Government officers in Working from Home with platforms and services like eOffice, Video Conferencing, Messaging, and VPN Services. Integration of digital payments & direct benefit transfer in many government schemes has helped direct transfer of benefits to people in need. We could witness large scale adoption of such systems during the pandemic making services cashless, paperless & contact less. NIC's robust and scalable cloud infrastructure has supported many of the government platforms and services to function seamlessly during the COVID-19 period.

As we head into the start of a new year, I hope that we can all channelize our spirits and aspirations to establish a compelling vision to be agents of positive change, both for ourselves and our people.

Wishing you all and your dear ones a very Happy New Year, 2022.



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e-SHRAM

Portal for Registration of Unorganized Labourers of India

Edited by **MOHAN DAS VISWAM**

e-SHRAM is the first-ever national database of unorganized workers. It aims at registering 38 Crore unorganized labourers engaged in construction, migrant workers, gig and platform workers, street vendors, domestic and agriculture workers, milkmen, fishermen, truck drivers, etc.

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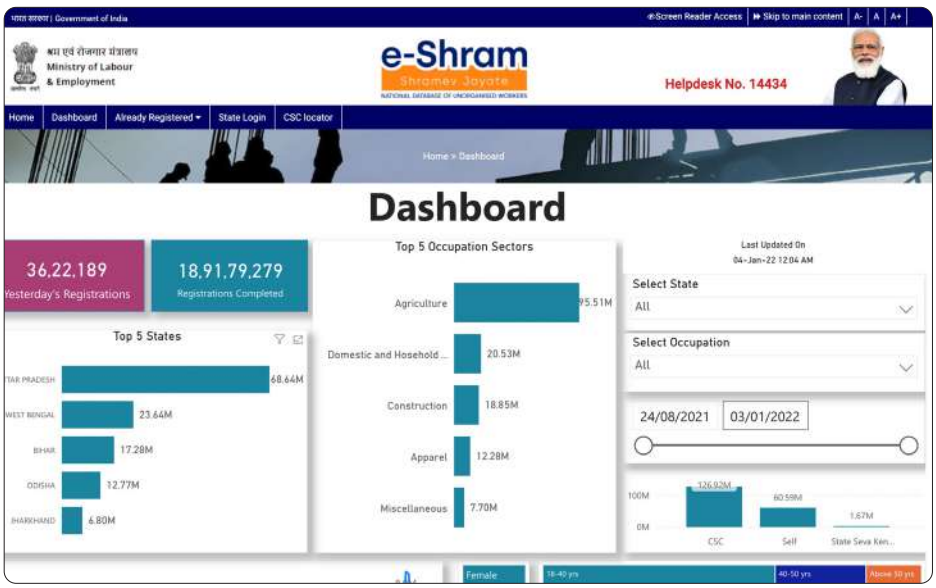
e-SHRAM is a step towards the building of Aadhaar Authenticated comprehensive Database of Workers in India working in the Unorganized Sector. It is the first-ever national database of unorganized workers being built-up in the country. It intends to register 38 Crore unorganized labourers engaged as construction workers, migrant workers, gig and platform workers, street vendors, domestic workers, agriculture workers, milkmen, fishermen, truck drivers etc.

Introduction

The Ministry of Labour and Employment entrusted NIC to develop a portal to build a comprehensive National Database of Unorganized Workers (NDUW) in India. The portal was launched on 26th August 2021 by the Hon'ble Union Minister of Labour and Employment, Shri Bhupender Yadav, in the presence of Hon'ble Minister of State, Shri Rameswar Teli.

The e-SHRAM portal is available at URL: https://e-SHRAM.gov.in. For registration, workers are required to provide their Aadhaar number, mobile number and bank account details. They can register themselves on the portal. They can also avail the registration facility at their nearest CSCs /SSKs. Apart from the particular details, information on Occupation, Educational

▼ e-SHRAM Portal Dashboard

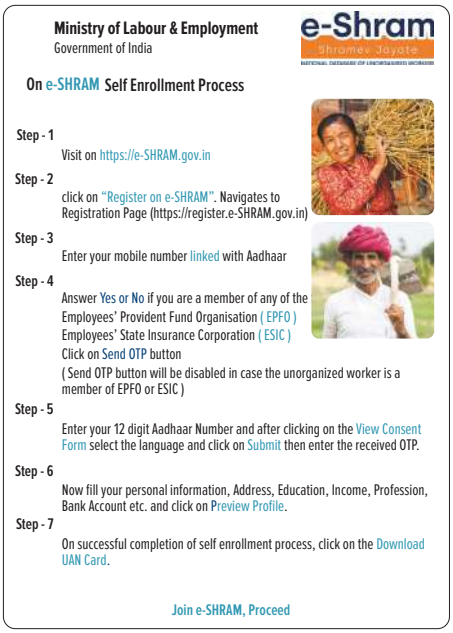


> In keeping with the Prime Minister's vision of "Sabka Saath, Sabka Vikas", e-SHRAM portal has been made available to register 38 crore, unorganized workers. It will not only register them but would also be helpful in the delivery of various social security schemes being implemented by the Central and State Governments.

BHUPENDRA YADAV
Hon'ble Minister, Labour & Employment, Govt. of India

> Under the leadership of Prime Minister Narendra Modi, the Government has developed an e-SHRAM portal for creating a National Database of Unorganized Workers (NDUW) for the first time since independence. It will be useful for addressing the problems of unorganized workers effectively.

RAMESWAR TELI
Hon'ble Minister of State, Labour & Employment, Govt. of India



▲ Process to do e-SHRAM Card Registration

Qualification, Skill types, Disability etc. are being captured to extensively use the database for all practical purposes including delivery of various social security schemes being implemented by the Centre and State Governments for them.

Registration on e-SHRAM portal is free of cost. Workers are not required to pay any charges to any registering entity.

Features of the Product

- Integrated with UIDAI for Aadhaar eKYC (OTP / Biometric Authentication)
- Integration with NPCI to know the name of Aadhaar seeded Bank
- Issue Universal Account Number (UAN) instantly on successful registration
- SMS and eMail integration
- Registration by Self and assisted mode (thru' CSC and SSK Centres)
- CMS based Bi-lingual Website
- Power BI for data reports and analytics
- User management to create the state users for assisting the registrants

Benefits

- Availability of consolidated database of Unorganized Workers of India
- Identification of occupation sector-wise, age group-wise, gender-wise workforce in different parts of the country
- Seamless data sharing with various stakeholders such as Ministries /Departments /Boards /Agencies of Central and State Governments through APIs for delivery of various social security and welfare schemes
- Possibility of identification of migrant workers
- Providing a comprehensive database to Central and State Governments for tackling any National Crisis like Covid-19 in future
- Movement of Workers across sectors i.e., organized to unorganized and vice-versa

Technologies Used

- Micro Services Architecture
- Open-Source Tools for application development
- MS-SQL Server 2019 under Linux environment
- Power BI for Analytics
- Redis - an open source, in-memory data structure store
- Drupal 8.9 for CMS based Website

> Government has developed e-SHRAM portal with the objective to create a national database of unorganized workers. This exercise is first of its kind in the history of the country. The data will be authenticated with Aadhaar and will be a great tool for delivery of various social welfare benefits to them.

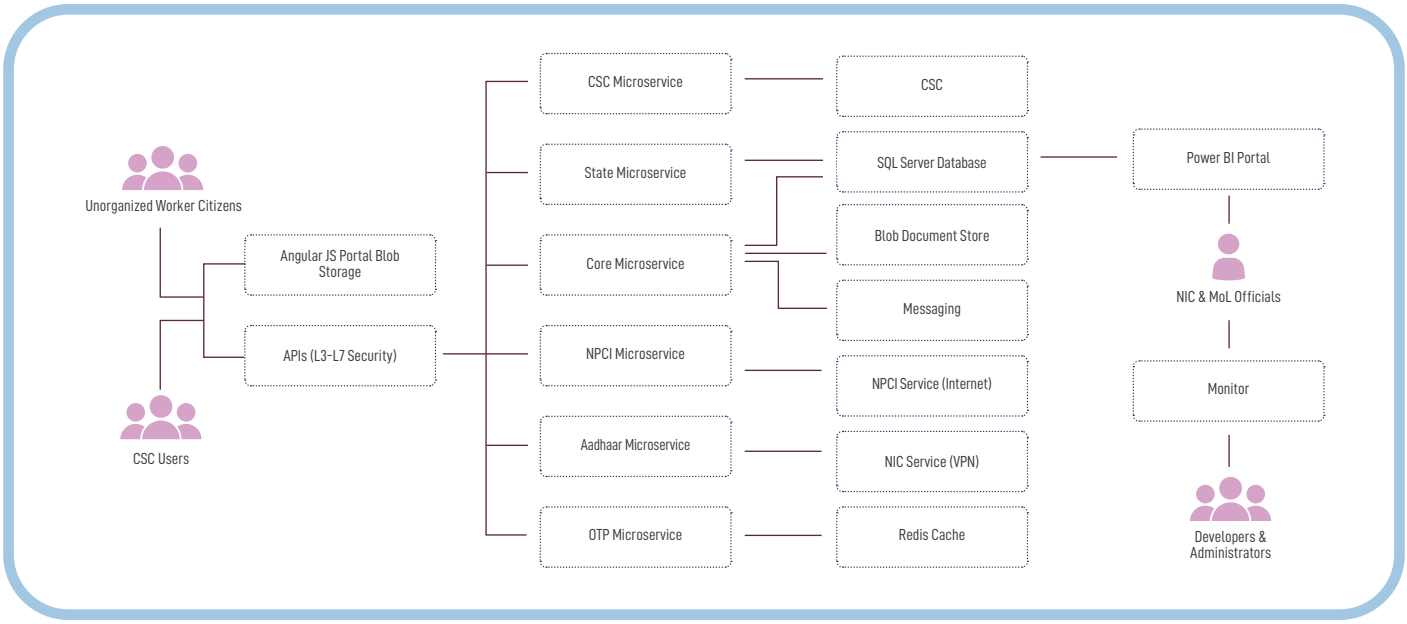
SUNIL BARTHWAL
Secretary, Labour & Employment, Govt. of India

> Unorganized Workers are the nation builders; their contribution in the national income is about 50%. Government for the first time has developed a portal to bring estimated 38 crore unorganized workers at one platform. The e-SHRAM portal will go long way to address their problems.

AJAY TEWARI
Joint Secretary & DGLW, Labour & Employment, Govt. of India

> 17.77 Crore unorganized workers have registered on e-SHRAM Portal in a short span of four months that too with e-kyc based Aadhaar authentication. In another one year, it is expected to touch 40 crore+ registrations. Ministry of Labour and employment is planning to use this database for extending social security benefits to unorganized workers. Further, this database can be used for offering job opportunities to unorganized workers as per their skill sets.

RAJESH GERA
Dy. Director General, National Informatics Centre



▲ Sample of e-SHRAM Card

Summary

NIC is the technical partner in the e-SHRAM project and has designed and developed the e-SHRAM portal in consultation with the Ministry of Labour and Employment for registration of Unorganized Workers. Within a span of about 3 months, more than 10 crore workers have been registered on the portal and it is going on, against the initial estimated target of 3 crore workers in the first year. Capacity of the portal is at 2 lakh registrations per hour. Each registrant is allocated Universal Account Number (UAN) and can download e-SHRAM card instantly. It has also provisions for updating e-KYC details, personal information, educational qualification, occupation, skill type, current address etc. to dynamically update the information on portal.

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PBOX

Proctoring Based Online Examination System

Edited by **DR. DIBAKAR RAY**

PBOX provides the ability to conduct exam in a much scalable, secured and network resilient way with additional provisions to be deployed in on-campus mode. It provides a mechanism to do auto proctoring powered by AI / ML on the edge device itself without sending each frame to the server. It allows the candidate to continue exams in disturbed network environment by buffering the answers during the offline period along with many other innovations.

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Online examination system is the necessity of the current time but very few of the online examination systems allow examination to be conducted over a disturbed network along with online proctoring. With this inspiration NIC has developed PBOX which is a proctoring based system providing functionalities more focused towards network resiliency and security which are the two prime and critical aspects of an examination in the context of India. This system is powered by many prominent technology stacks like Big Data, Progressive Web App, Service worker, AI/ML and containerized platform which enable it to provide functionalities in a very unique way.

Modes of implementation

Online mode

All candidates will appear for the examination remotely and central server will handle all the requests.

On-campus Mode

The candidates will appear the examination from the centres in an intranet environment, where the local server at the center will fetch the encrypted questions from the central server.

Features

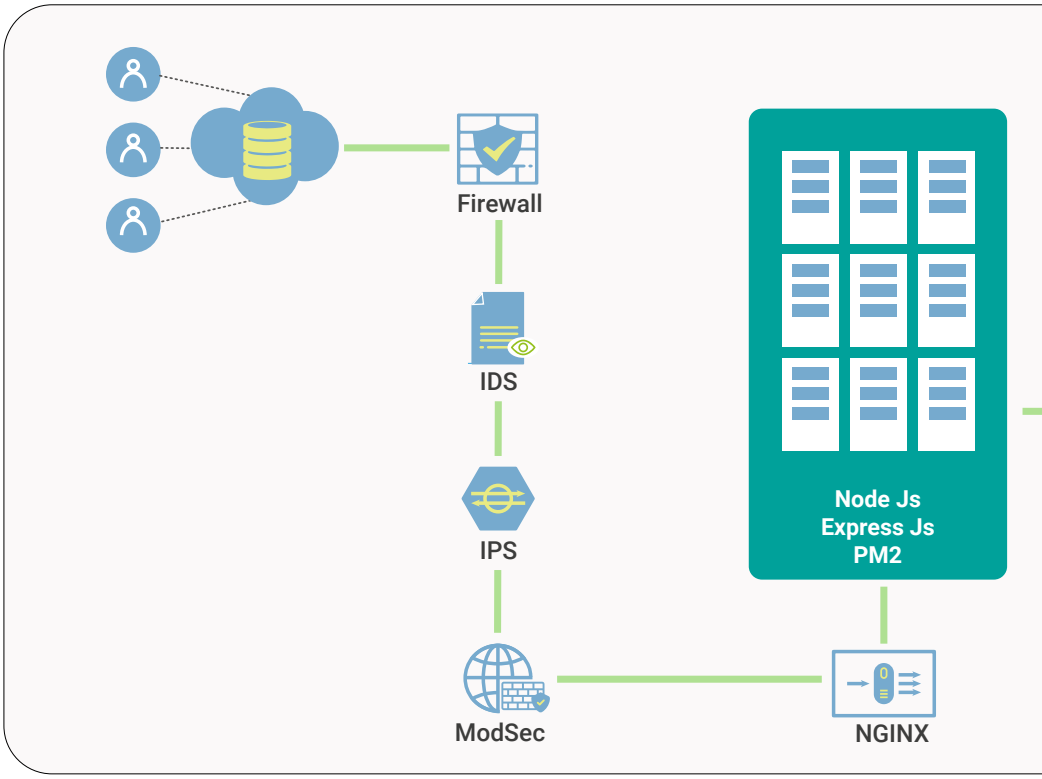
Examination configuration

Each examination can be configured separately at a very granular level like examination specific instructions, slots and their timings, need of proctoring service or not, need of Face Authentication or not, various system generated messages, deployment related configuration like use of message broker is required or not etc.

Question & candidate Data Upload

The exam conducting body can upload

▼ Fig:1 Deployment architecture in dedicated Kubernetes Cluster



candidates and questions against each section through excel sheet or by direct data entry through GUI or can be fetched from using API from a third party system.

Randomization of Question

The exam conducting body can generate randomized question set which then gets pushed to a different server from which the exam starts to keep the sanctity of the central question bank.

Proctor Dashboard

The exam conducting body can create proctor user and map candidates to the proctor whereas the proctor can monitor system identified violations. Proctor will have the facility to pause or terminate the exam of a specific candidate. He may also initiate a chat with a specific candidate which will be recorded for auditing purpose.

Question panel

Color coded and multi shape panel to show all question numbers clicking on which system will navigate to the specific question.

Network Resilient

Exam can be continued even if network fails in between. PBOX manages the traffic in intelligent way through Smart Bandwidth Management, so that the service continuity does not get disturbed.

Artificial Intelligence

Face Recognition for identification and Remote Proctoring with following features i.e. Multi-persons Detection, Absence Detection, Eye Ball tracking and Whispering Detection.

Subjective / Objective Question

The system facilitates of different types of questions like MCQ, MRQ, true/ false, subjective, case study, grouped comprehension. Questions and options can have image attachments too.

Answering Mode

Has provisions for descriptive answer, single choice and multi choice answer.

Reset & Review

Has provision to reset the already given answer and mark question for review which can be answered/confirmed at the later stage.

Automate Result

Test result processing of MCQ & MRQ type questions can be automated.

SmartLock App

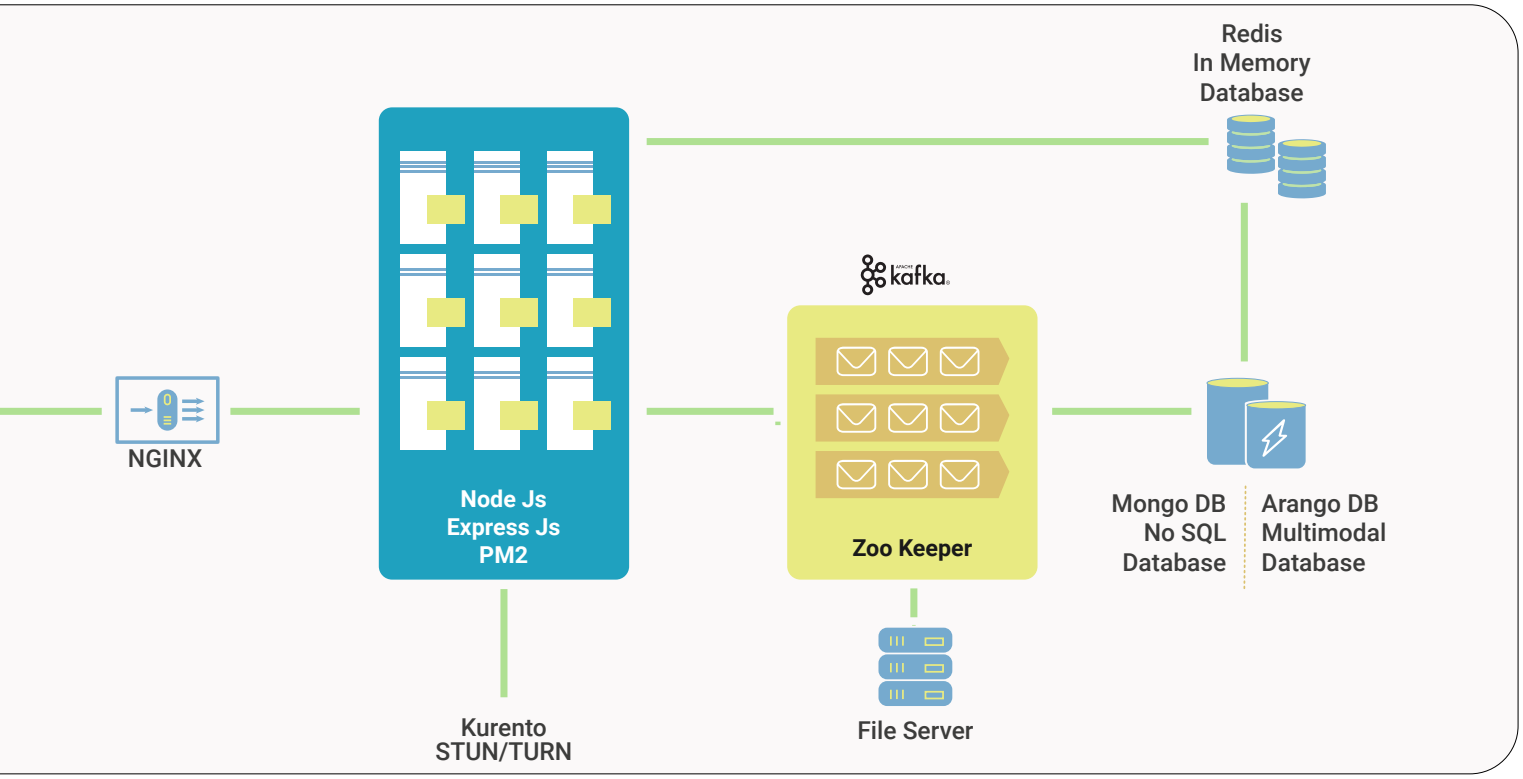
Protects the environment by screen locking before starting the exam and blocking applications like Team Viewer, Anydesk, YouCam, ManyCam etc. to avoid any malicious activities and inform such activities with the web portal. This will run outside the scope of the browser but in handshaking mode with the web application. If the candidate tries to kill this application then PBOX web portal will stop working.

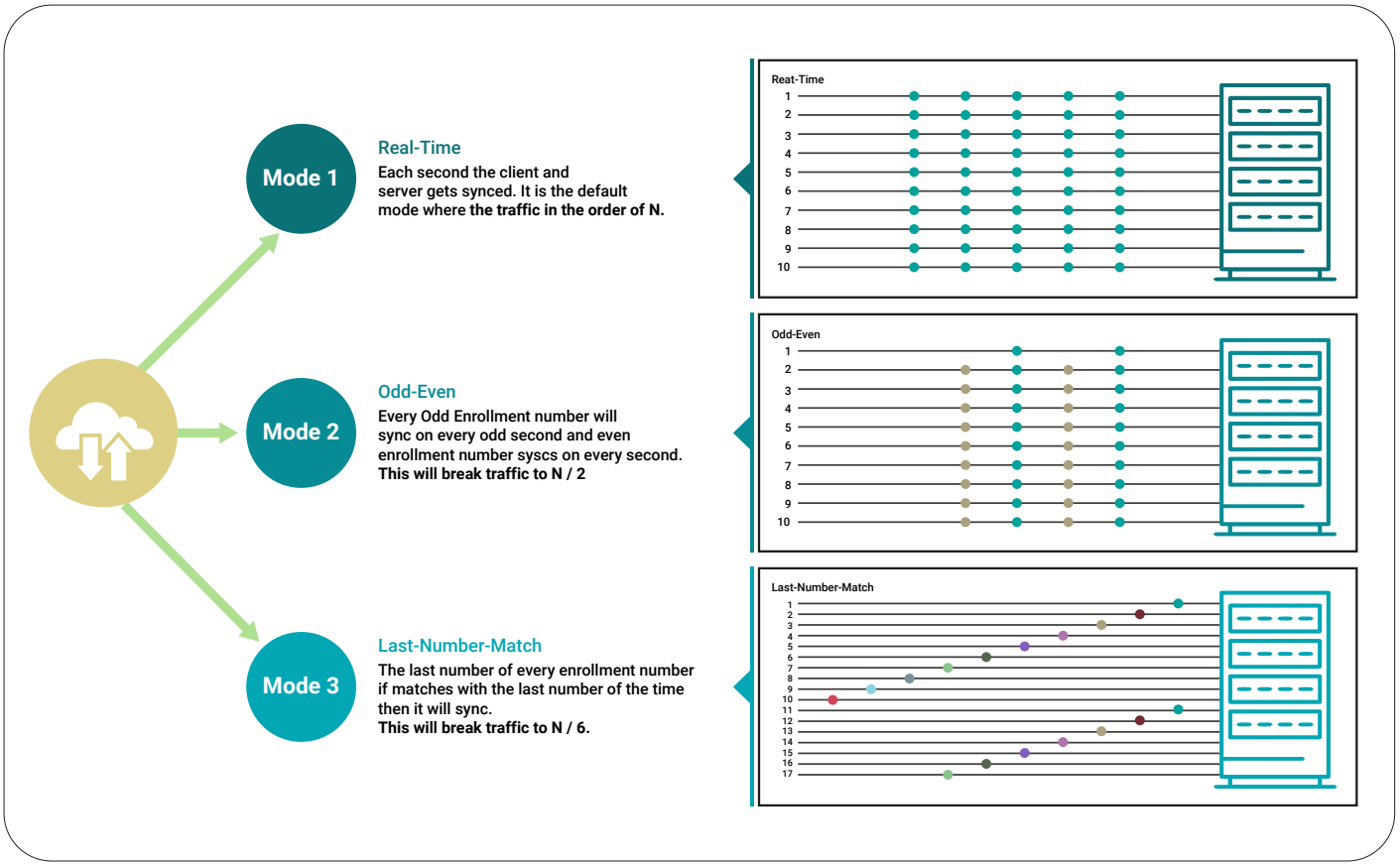
API Integration

Open API has been provided for integration with third party peripheral modules so that clients can do data transformation as per their own requirement and reporting

"PBOX, is a proctoring based online examination system providing functionalities more focused towards network resiliency and security, which are the two prime and critical aspects of an examination in the context of India and is need of the hour during the Covid-19 pandemic. The product has been developed by NIC, Odisha with a focus to conduct online and on-campus examination with /without proctoring with the use of AI / ML for face recognition and proctoring activities."

KABITA ROY DAS
Dy. Director General & SIO
National Informatics Center, Odisha





▲ Fig:2 Smart Bandwidth Management System

Technologies Used

- **OS:** Linux
- **Frontend:** Angular, Javascript, Bootstrap, HTML5, Python
- **Backend:** Node.js
- **Web Framework:** Express.js
- **Load Balancer:** Ngnix
- **Persistent Database:** MongoDB
- **In-Memory Database:** Redis
- **Message Broker:** Kafka, Zoo keeper
- **AI and ML:** Deepface, Python, Flask, Face API, Tensorflow
- **Cloud Platform:** Openstack
- **Orchestration Platform:** Kubernetes, Rancher
- **Containerization:** Docker

Innovations Applied

- In addition to regular common functionalities related to conducting examination in either online or on-campus mode there are many innovations which have been included to make this product unique and contextual in Indian environment
- We have created one buffer zone on the client side to keep the attempted answers in the event of network failure and syncs to the server automatically sensing the network availability
- To reduce the latency there is no update or delete command executed with the request and response cycle while running in high performance mode. Update or delete operation are handled separately without blocking the I/O operation
- Exam module of the project is disassociated from the central question bank database neither for read nor for write. This module interacted with question bank database server through intermediate servers like Redis & Apache-Kafka reducing the cyber attack surface on the question bank
- Use of in-house developed bandwidth management algorithm to send data packets to server reducing the overall network congestion and allowing the candidate to operate with less bandwidth as well
- In house security algorithm implemented to protect client side database in the context of On-Campus examination in the event of both database admin and OS admin password are leaked
- AI/ML based image processing is done at the client side taking frames from the web camera and only the frames having suspicious activities will be reported to server

Way Forward

In the context of India, multi stakeholder's involvement in conducting examinations is a common practice where exam is conducted by one agency and taking technical support from another agency, so integrity is the legal aspect which is very crucial in designing these types of systems.

So Blockchain has been put in design blueprint to keep a distributed ledger with every stakeholder to have more transparent and battle ready security system in coming phase of rollout. Whispering and different types of object detection will also be available in coming days to enhance the proctoring based offerings.

Contact for more details

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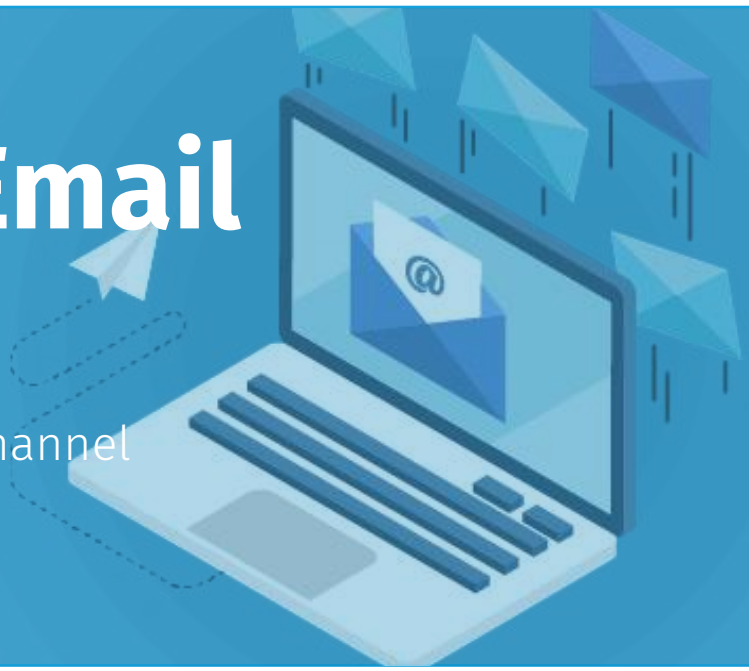
Government Email Service

Enabling secure communication channel within the Government



Edited by **MOHAN DAS VISWAM**

The importance of Email Service was evident during the ongoing pandemic as it ensured that communication within the Government is not impacted by COVID-19 and continues to operate seamlessly. The service is the largest service of its kind offered by any Government globally.

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Email forms the backbone for all e-Governance initiatives and is the primary mode of communication in the Government both at the Centre and States. The Email policy of the Government was released in February 2015 and in accordance with its mandate, an Email ID will be given to all Government officials which is provided by NIC along with 24x7x365 support. The primary objective of the policy was to ensure that Government data resides on Indian servers and within the control of Government of India. The Government Email Service is enhanced through an open-source solution in accordance with the "Policy on adoption of Open-source software for Government of India" by MeitY. This provides strategic control to GoI over the Email Service.

Features of Government Email Service

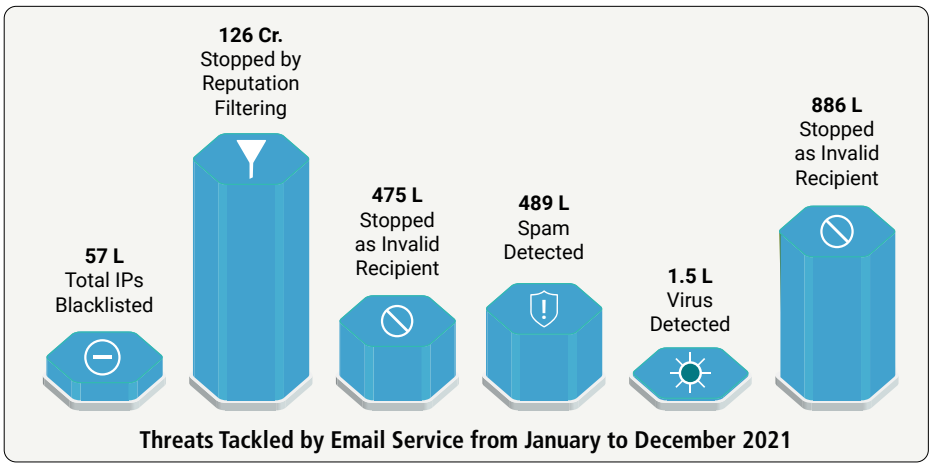
The Email Service provided by NIC is as per the global standards ensuring security, performance, availability, redundancy, and service continuity in addition to a rich feature set. The prominent features of the current service are Internationalized Domain Name, Support in Multiple Languages, User Persona, Standardized Office Templates etc. The Government Email infrastructure is under constant attack by hackers. Some of the figures relating to threats addressed by the GoI Email Service are shown in Figure 1. The security layers offered in Government Email Service are illustrated in Figure 2.

Security Technology Used

The incoming Email traffic passes through Firewalls, IPS & WAF for filtering of malicious contents and then passes on to the authentication

"It is great to see that NIC's email system has near universal coverage. When NIC decided to migrate from proprietary email to open source based inhouse developed system in 2015 there were several who doubted its ability to scale to needs of lakhs of Government users or provide user friendly access as compared to other commercially available email suites. It is heartening to see how the email system has been providing flawless service without interruption. Apart from its availability, I wish to mention unique security features and functionalities which has kept email data secure despite continuous attempts to breach the system. My compliments to those who are working behind the scene to provide an email system which can be rated among the best."

Dr. Ajay Kumar, IAS
Secretary
Ministry of Defense, GoI



Threats Tackled by Email Service from January to December 2021

Security Features

- Geofencing
- SPF, DKIM, DMARC
- File blocking based on extension type
- Device Mapping
- Hyperlink Alert
- Mail Encryption
- Anti-Phishing, Anti-Spoofing, Anti-Spamming, Anti-Virus
- IP reputation filtering
- User Last Login History
- 2-Factor Authentication

▲ Figure 1: NIC Kavach Application

1600+
Virtual Domains like @gov.in, nic.in, @meity.gov.in

24 PB
Storage

2000+
Applications for SMTP

30 Lakh
Email Users

1.2 Crore
Malicious Attacks Blocked / day

4.5 Crore
Daily Email Transaction

▲ Figure 2: Government Email Service Statistics

eMail Services Core Team

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> NIC Email Service has been exceptional in ensuring ease of communication in Government. The platform is easy to use and has features as per global standards. To ensure data security of the Government, I recommend that all officials only use the Government Email Service.
>
> **Abhishek Singh, IAS**
> CEO MyGov, President & CEO NeGD
> MD & CEO Digital India Corporation

layer for 2-Factor authentication using NIC Kavach application. Web Application Firewall (WAF) acts as a filter which protects against the application attacks. Firewalls protect against network attacks by blocking unsolicited and unwanted incoming network traffic. Intrusion Prevention System (IPS) detects and prevents identified threats. IPS continuously monitors the network for possible malicious incidents and captures information about the same. 2-Factor Authentication (2FA), named Kavach with a second level verification in addition to the login-password combination allows only authorized users to access the Email service (Refer Figure 3). Kavach as a framework also includes Geo-fencing that allows access to an ID from the place of physical presence of the user thereby reducing the attack canvas.

Summary

Email continues to be one of the most prolific medium used by hackers to compromise the Government service framework. Hence, it is essential that users adhere and follow strict service security practices and ensure that devices from which they access Emails are patched with latest updates for the Operating System, Anti-Virus and other software stack on the system. Users must also proactively report any suspicious / malicious Emails to incident@nic-cert.nic.in.

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Blockchain Technology

Driving the Next Generation eGovernance Applications

Blockchain technology has drawn significant attention from the Government due to the pain areas that it promises to address. Several schemes of the Government require the verification of the documents / facts to ensure the eligibility of the applicant. This is a time consuming process. Although some of the departments use the electronic data available with other agencies to verify the applicant's claim electronically, the lack of confidence that the data has not been tampered has set the Government to look at alternatives such as blockchain. The menace caused by spurious drugs, liquor, contaminated blood etc. has cost the life of many a citizen. Tracking and tracing the source of various commodities such as medicines, seeds, organic products is now vital to providing better services to the citizens. Blockchain Technology provides the necessary impetus to move towards an intermediary-less system by providing a single source of truth and ensuing that the data is secure and tamper-proof.

This article provides details of the use-cases developed and deployed that have benefitted from Blockchain Technology.

एनआईसी
NIC

Blockchain Technology is a game changer in the way eGovernance solutions are conceptualised and implemented. Karnataka Government is working closely with the National Informatics Centre to leverage the adoption of this technology. The first BCT system, known as 'CertChain' system, has been developed and implemented by storing about 1.1 Crore mark-sheets of class X and Class XII students of past 7 years and this is going to reduce the time taken for document verification. This system is enhanced to capture the certificates of the various departments to build a repository of certificates issued such as caste, income, birth, death, ration card, agriculturist, domicile etc. These repositories will pave the way for easier verification of certificates by citizens and organisations and enable entitlement based service delivery targeting the eligible citizens. The Government is also working with NIC to build 'LandChain' to store land and property details that will provide immutable and trustworthy data to all stakeholders.

P. RAVI KUMAR I.A.S
Chief Secretary
Government of Karnataka

Blockchain is a distributed system that deploys a peer-to-peer network of computes / nodes. All the nodes verify the transactions submitted to network and agree upon a set of the transactions (block) to be stored in the ledger (database). Each block of transaction is linked to the previous block cryptographically. All nodes maintain the same copy of the ledger. It is not possible to delete or overwrite any transaction once it is committed to the ledger.

Typical categories of applications that can benefit from blockchain implementations are Identities, Registries, Supply Chain, Licenses and permits. Specifically, applications related to issue of certificates like caste, income, birth, death, Surviving Family Members, Land Records, Driving License etc. and Supply Chain category of applications such as Drug Logistics, State Excise Supply Chain, Blood chain, Agricultural Commodities supply etc.

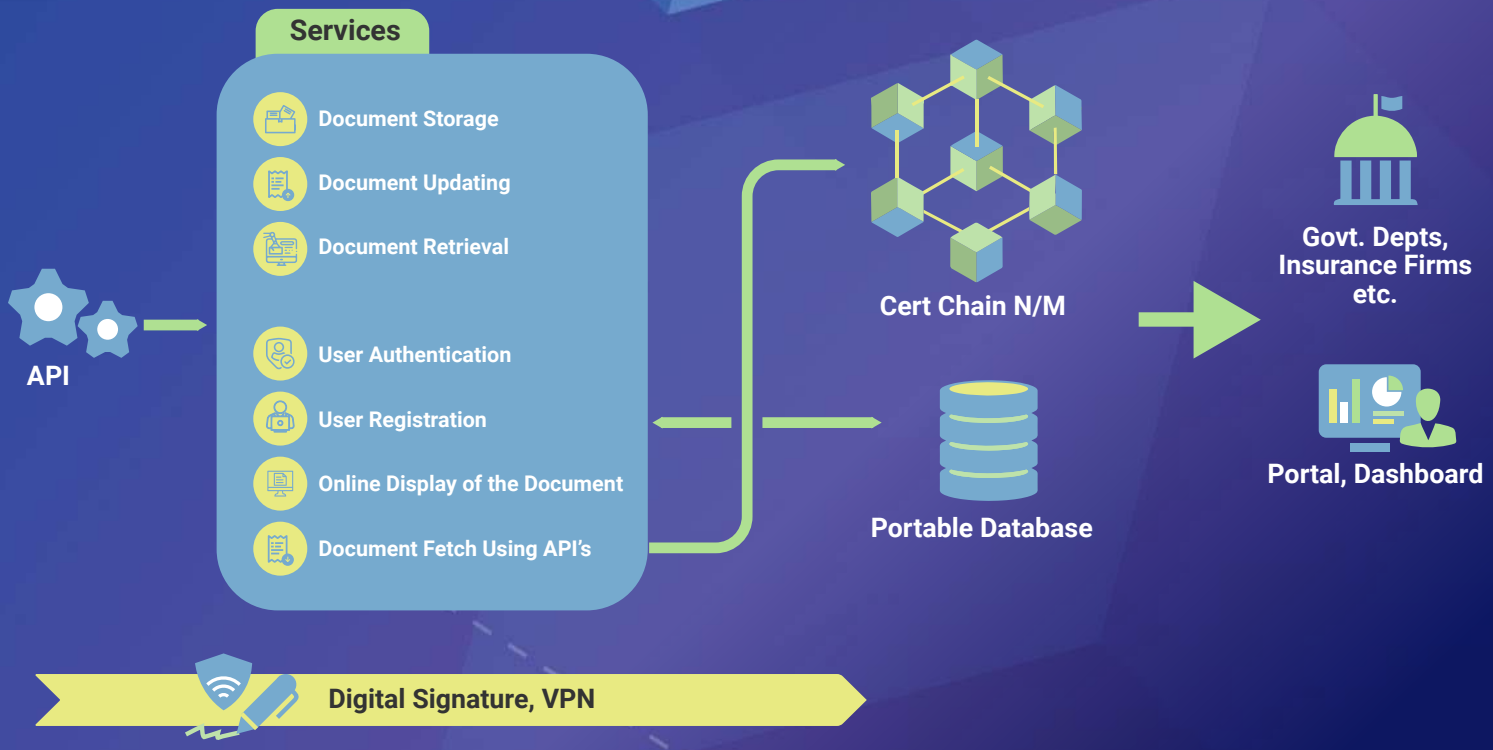
Centre of Excellence in Blockchain Technology

The decision makers in the Government are enthusiastic about adopting emerging technologies. However, the non-availability of sufficient experts in, the field, high cost of setting up and management of blockchain networks have been deterrents in its large scale adoption. Considering the above challenges, the Centre of Excellence in Blockchain technology was set up by NIC at Bengaluru. The CoE provides a platform that the Government departments can look for consultancy, capacity building and as an incubation centre where they can perform PoCs, evaluate different platforms etc. and migrate to production with confidence.

Activities of the CoE-BCT

The CoE has been exploring various Blockchain Frameworks to enable blockchain powered eGovernance applications. The CoE has deployed Hyperledger Sawtooth/ Fabric blockchain networks with nodes in different NIC cloud infrastructure across data centres. Blockchain network has been established with nodes located in NIC Mini Cloud infrastructure in Bengaluru, Pune, Jaipur, Delhi and Hyderabad. The Ministry of Electronics and Information Technology (MeitY) has funded the "Design and Development of Unified Blockchain Framework (UBF)". The project is being executed in collaboration with Centre for Development of Advanced Computing (C-DAC), Indian Institute of

▼ Blockchain lab



▲ Solution Architecture

Technology Hyderabad, Institute for Development and Research in Banking Transactions (IDRBT), Society for Electronic Transactions and Security (SETS) etc. NIC's role in the project is to provide Blockchain As A Service. As part of this project, Hyper Converged Infrastructure is proposed to be established in Hyderabad, Bhubaneshwar and Pune. The infrastructure will be used to set up Kubernetes Clusters and UBF will be deployed over this.

Development of blockchain related software modules such as smart contracts, APIs for interfacing with the eGoverance applications has been done.

Organising user awareness workshops, Technical sessions on blockchain, deliberating with NIC officers handling various sectors for evangelizing the use of Blockchain are other activities performed by the CoE.

Solution Architecture

The blockchain implementation in the eGovernance applications will ensure that the existing applications continue to function as per the business logic presently adopted. At critical stages in the workflow of the application or at stages when the information needs to be stored in the blockchain, these applications will submit data to blockchain or fetch data from the blockchain through the APIs. The APIs in turn will submit/ retrieve the data to/ from the blockchain ledger. Smart contracts/ chain code will be executed by the Blockchain platform before the data is written to the ledger. To ensure non-repudiation of the data being sent to the blockchain, the data is to be digitally signed by the authority who issues the documents or updates the data.

The data submitted to the blockchain will be stored in the off-chain database and the hash of the data is stored in the ledger. The off-chain database can be any conventional database. Postgres RDBMS is used to store the off-chain data. When the data is retrieved from the blockchain system, the hash of the data from the off-chain database is compared with the hash retrieved from the ledger to confirm if data has not been tampered in the off-chain database.

Blockchain Use Cases

Two categories of applications that benefit from the use of Blockchain were identified for implementation – Document Repository and Track and Trace System.

Certificate Chain

(A Blockchain Powered for certificates)

Several certificates issued by the government are essential for the citizens, especially for - claiming benefits of various social welfare schemes, employment, legal purposes and admission to educational institutions. These documents need to be stored safely and produced on demand to the authorities. Most of these documents are issued to citizens in a paper-based format even though the data is stored electronically.

Challenges in the current system

Fake documents

With the improvement in the technologies and internet, the generation of fake certificates has become even more rampant and is exploited by unscrupulous elements of society. Many times these fake certificates can have a detrimental effect on the government exchequer and, more so, deprive the benefits to genuine beneficiaries.

Enhanced paperwork

The process of obtaining a duplicate certificate involves a lot of paperwork, right from lodging a complaint with police, filling up a request for a duplicate certificate, payment of fees, and of course, waiting for the concerned authority to retrieve the certificate from the record room and issue the duplicate certificate.

Cost of printing and storage

The cost of paper and printing itself are not the only items of expenditure related to documents received upon completing education. Major institutions and schools spend enormous amounts of time and money on storing these documents.

Delay in verification

Ascertaining the authenticity of certificates issued by issuing institutions has become a major cause of concern these days due to the prevalence of malpractices like fraud and misrepresentation of records. Manual verification of documents is a lengthy process that could be as simple as examining the original document produced by the applicant or as complex as sending the document to the issuer to ascertain if the document was indeed issued by that person.

Data can be changed, hacked, or lost due to natural disasters

With data being stored in a centralized location, there are chances of the data being tampered in addition to be a single point of failure. The loss and damage to documents in education is quite a common basis for litigation, which results in financial costs and wasted time.

Need for carrying original certificates to verify the authenticity

The students need to produce the original documents to various authorities for higher studies/ employment etc. Loss or damage to these documents during travel is a cause for concern.

To circumvent the above problems associated with paper-based documents, National Informatics Centre (NIC) has proposed blockchain technology for secured storage and retrieval of such certificates. It has developed the blockchain technology-based solution called Certificate Chain which can be used explicitly for storing documents in the digital format. The Certificate Chain ensures that the Certificates are recorded securely, tamper-proof, and easily traceable. The main advantage of this Certificate Chain system is that the Certificate could be accessed online by any authorised person/ institution and be assured that it is genuine and not tampered – all this without the need for an intermediary. This provides the necessary trust to the agencies which use these documents to ascertain the eligibility for providing benefit to the citizens.

Benefits of blockchain implementation

- Transparent
- Tamper-proof
- Paperless
- Intermediary free.
- Trail of the certificates is available

Verification Methodologies

The retrieval process of certificates from the Certificate chain system can be enabled by

In pursuit to achieve Digital Excellence, IT Dept. of CBSE implemented yet another "Emerging Technology", i.e. "Blockchain" for its results and academic documents in technical collaboration with Centre of Excellence in Block-Chain Technology, National Informatics Centre. This system has been named as "Academic {BlockChain} Documents (ABCD). The Academic {Block-Chain} Documents (ABCD) ensures that Academic documents are recorded in secured, tamper-proof and transparent manner. Blockchain maintains the history of changes to the documents as well. The platform thus eliminates the challenges with respect to non-availability of instant Academic documents and lengthy process of verification of these documents. CBSE is happy to have partnered with CoE {Blockchain Technology}, NIC which is a pioneer in the country to provide such a system.

Dr. ANTRIKSH JOHRI
Director
(IT & Project), CBSE

Blockchain
Document System

Local Bodies
(Birth Certificate, etc.)

Accreditors,
Validators & Testers

Employers

Police Dept.

Professional Course
(Degree Certificate, etc.)

Student

Government Dept.
(Admission,
Scholorship, etc.)

Educational Institution
(Transfer Certificate,
Marksheet, etc.)

Revenue Dept.
(Income,
Caste Certificate, etc.)

▲ Stakeholders of Certificate Chain

"The Aushda system has been enriched by integrating it with Blockchain platform with the support provided by NIC. Karnataka Drug Logistics department is one of the first in the country to have leveraged the benefits of blockchain technology in Supply Chain. Availability of tamper proof information about the medicines in the complete chain gives all stakeholders the option to verify the authenticity of the origin of the medicine and other critical information such as quality of the drug and expiry date etc which is critical to ensure supply of quality medicine to patients."

K.S. LATHAKUMARI, I.A.S
Director
Karnataka State Medical Supplies Corporation Ltd.

multiple methods. Web portal for verification enables verification of certificates one-by-one or in bulk mode. In addition the API will help two IT systems to exchange data in machine readable form and internally use the data thus retrieved.

Verification By Citizens

Citizens can verify the Certificates by going into the Web portal. Verification by the citizens could be carried out using different methods – Based on document details or based on Certificate ID (A unique ID for the certificate in the blockchain).

Verification by Organisations

As a first step, the organisations need to register to avail the service. The department or organisation can carry out verification in following ways

- **One-by-one verification on the portal :** The orgnaisation can enter the details of the certificate such as the document type and the ID and the details will be displayed.
- **Bulk Verification :** The organisation can upload a list of certificate IDs for which the document details are required to be verified. The portal will retrieve the Certificate details from the blockchain and prepare a file that can be downloaded by the organisation.
- **API to integrate with the line of business application :** The organisation can use APIs to fetch the data from the Certificate chain and integrate it with their application so that the logic for automatic verification can be built. This will help to automate their process of verification.

Certificate chain has been implemented for Central Board of Secondary Education and the Karnataka State Education Board for storing the marks sheets of students of class X and class XII

Karnataka State Education Board

1.4 Cr Marks-sheet (2015 onwards)

Central Board of Secondary Education

1 Cr Marks-sheet (2019 onwards)

Certificate Chain as a service

A Generic certificate chain service has been deployed and a portal for on-boarding of the stakeholders has been developed. The two main stakeholder categories include Certificate Providers and Certificate Verifiers. The system is flexible enough to enable the Certificate providers to self-register and indicate the documents to be stored in the blockchain and submit the underlying schema of the documents. The providers can also list the data items to be displayed to the verifiers and provide bi-lingual content. This provides a common platform for the verifiers to verify documents submitted by candidates across the country using the same interface rather than going to multiple portals.

The Certificate providers can then submit the certificates to the blockchain in bulk or the individual transaction can also be submitted. The CoE provides the APIs which can be consumed by the Certificate providers to send data to the blockchain and receive the transaction ID as response, which can be stored in the provider's database as a reference.

▲ **Stages in the supply chain and value addition to the details stored in Blockchain**

The Certificate verifiers can also self-register in the portal and use the portal for verification of individual certificates or a batch of certificates.

Drug Logistics Chain (Aushada)

(A Supply chain system for procurement and issue of medicines to Government Hospitals)

The supply of drugs to the Government hospitals involves the procurement of drugs from the Manufacturers and ensuring its transportation to the designated warehouses located in different districts and facilitating the supply to hospitals periodically. The patients are supplied these drugs on prescription by the doctors.

Specifically, the Government of Karnataka procures and supplies free drugs for patients across the state to enable them to get treatment on time without any shortage of drugs. Around 2,911 hospitals are covered under this scheme and every year more than Rs. 300 crores worth of medicine is procured and supplied to these hospitals through 26 Warehouses.

Challenges

Visibility

Lack of visibility raises issues like counterfeits, drug shortages - Patients, retailers and regulators don't know where drugs have originated. The consumer has no way of ascertaining the genuineness of the drug, its manufacturer, the quality and date of expiry which lends itself to entry of spurious drugs into the system.

Difficulty in tracking and tracing

The stakeholders of the supply chain maintain their own ledgers that are not accessible to others. This results in low visibility in tracing and tracking the drugs in the complete supply chain. It is a cumbersome process to collect the data required to produce the history of all the transactions made so far leading back to the manufacturer.

Regulatory compliance

Compliance with regulations under the Drug Supply Chain laws involves lengthy paperwork and substantial time.

Cold-chain shipping

Storing the essential information related to cold-chain shipping in centralized databases can be prone to manipulations or data hacks.

Recalling

Inability of Procurement manager to trace the medicines that are 'not of standard' or that are going to expire at various locations in the supply chain.

Theft

Theft of medicine in the supply chain and replacing them with counterfeit medicine is risky to the patient

Blockchain implementation in Aushada

Drug Supply Blockchain system is integrated with the existing online Supply Chain Management System (Aushada) to record the transactions in the blockchain. In the current version of implementation, the purchase order details, the inward of the drugs at the warehouse, the details of the drugs sent to the hospital, the inward entry at each hospital and issue of drug from the hospital store are recorded in the blockchain.

In addition, the details of the drugs sent to the laboratories for the quality check and the results of the quality checks are recorded. Smart contracts put in the checks and balances at each stage in the supply chain and also ensure that non-standard drugs are not moved down the supply chain. While the Aushada system implements these business logic, the blockchain

"The CoE-BCT at Bengaluru has established Blockchain networks with nodes across the Country to accelerate adoption of Blockchain in eGovernance applications. The implementation of Certificate chain for certificates of class X and XII for Central Board of Secondary Education and Karnataka Education Board and Drug Logistics Supply chain for Govt. of Karnataka has provided the necessary impetus for pan India roll-out. The Generic Certificate Chain Platform has been established to bring together the producers and consumers of certificates. This solution will enable easy on-boarding of various Central & State Government Departments to build a repository of immutable certificates issued to citizens. This repository can be leveraged by various Government Departments and other agencies such as employers, financial institutions etc. to access immutable certificates and take the G2C & B2C Service delivery to the next level."

NAGESH SHASTRI
Dy. Director General, NIC

provides the Aushada system a platform that gives immutability, provenance and finality to the data stored in the blockchain. Events such as recording the result of the quality check can result in "freezing" the drug and recalling them to ensure that non-standard drugs are not issued to the patients.

60 lakhs transactions of the last 2 years are available in the blockchain.

Benefits

- Patient can check the manufacturer details, expiry details & quality of the medicine before consumption.
- The Blockchain technology allows for documenting the transactions in a decentralized manner. It enhances precision and brings transparency at the same time saving crucial resources like time, cost and efforts.
- It not only results in integrated supply chain information but also maintains traceability of the transactions.
- Blockchain technology also facilitates tracking the movement of drugs from producer to the patient and reduces the chances of entry of counterfeit medicine in the supply chain.

Remote Voting

The remote voting system is blockchain-based distributed system developed to enable migrants and other in-service voters posted at different locations to cast their votes in a secure and tamper-proof way. Migrants and other in-service personnel can cast their votes from their place of work (Host Constituency) without commuting to their Parent constituencies, thereby saving time and money and enabling higher voter turnout. A Proof of Concept(PoC) was demonstrated to the Election Commission of India.

Process of Remote Voting

The remote voting process involves 3 main stages:

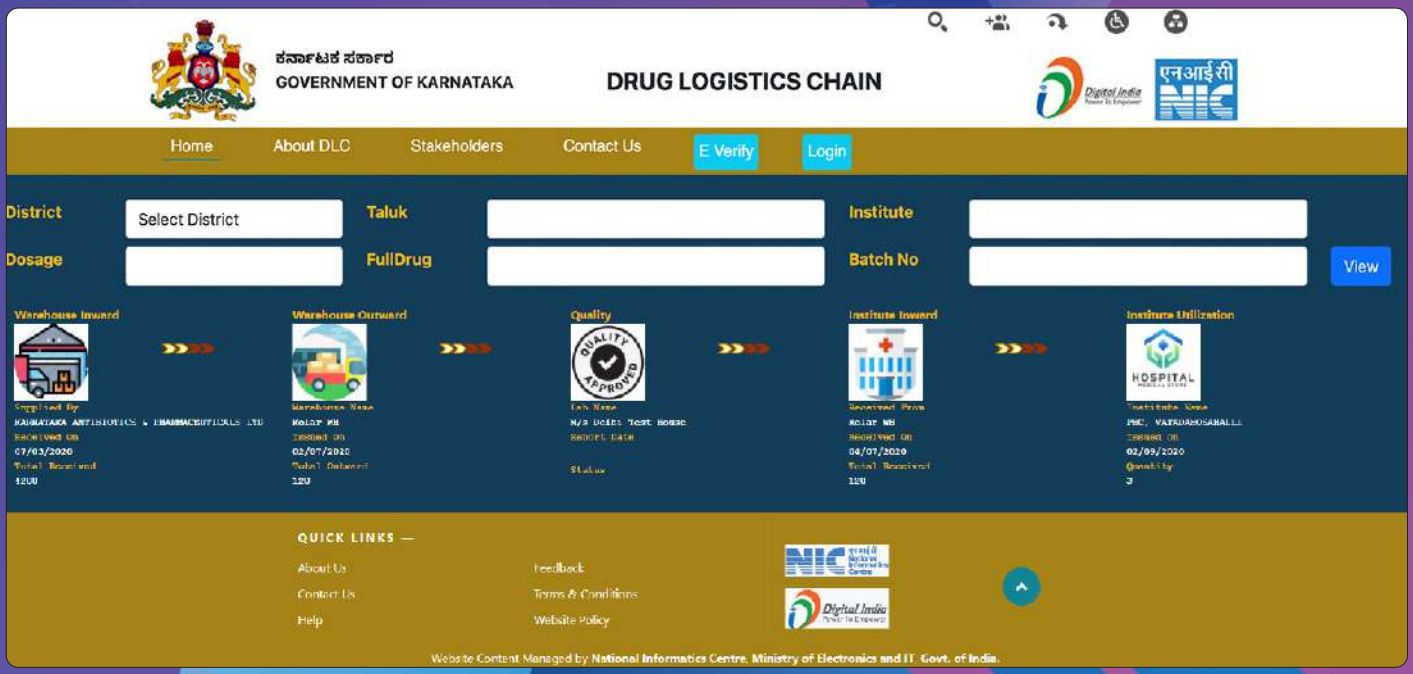
Pre-poll activities

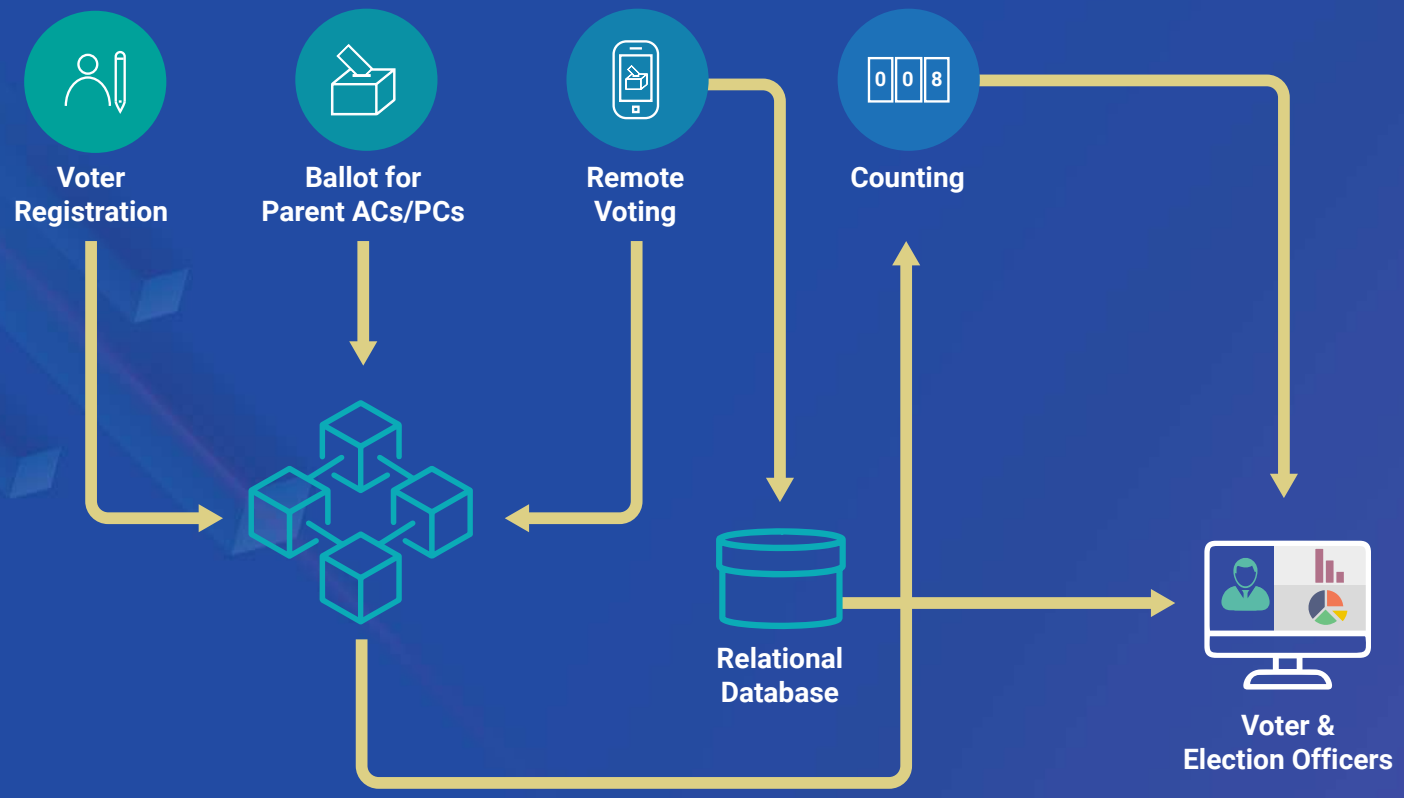
Voters desirous of availing remote voting, register themselves in the ECI portal & after approval by the returning officer of the parent constituency, the details of the voter and the host constituency are stored in the distributed ledger. Preparation of ballot by the Returning Officer of the parent constituency and submitting the same to the distributed ledger is carried out.

Poll day activities

The voter would present himself/ herself at

▼ Drug Logistic Chain web page





▲ Remote voting process diagram

the Host polling station and identification and verification of the remote voter details is done by the presiding officer of the Host constituency. After verifying the details in the remote voter slip with the data retrieved from the blockchain, the officer allows the voter to cast the vote. Casting of the ballot by the voter and storage in the distributed ledger are carried out in a secured manner by storing the encrypted vote in the blockchain. The encryption is carried out using the public key of the Returning Officer (RO) of the Parent Constituency.

Counting day activities

On the day of counting in the parent constituency, the RO downloads the encrypted votes for that constituency, decrypts the same using his private key and counting of votes would be performed.

The way forward

Land being a very important asset, prospective buyers need to ensure the ownership details before any purchase. Property disputes constitute a significant chunk of cases filed in various courts in the country. The CoE is working on designing a system for building a land chain consisting of a distributed ledger of land parcels/ urban property and maintaining all the transactions on the land. This will facilitate all the stakeholders such as Revenue, Registration departments, banks, judiciary and citizen to get access to the authentic and tamper-proof details of the land.

While the Government departments have been able to maintain electronic records of the assets, medical records, benefits received, there is a need felt for implementing a consent mechanism to the owners of the data so that data is shared with only those agencies which the owner approves of. It is also proposed to integrate the consent management system developed by NIC, Karnataka with Blockchain to store the consent in a tamper-proof system.

Contact for more details

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TAG NIC
TECHNICAL ADVISORY GROUP

Awards and Launch Ceremony

NIC TAG group organised State Mobile App and WebApp UI/UX Contests in July 2021. The awards for these contests were presented by the Director-General, NIC Dr. Neeta Verma on 12th October 2021.

State Mobile App Contest Awards

Recognize and award the exceptional existing mobile applications at NIC State Center level.

- **Gold Award:** Amma eServices of Land Records, Tamil Nadu
- **Silver Award:** Drug Free Himachal, Himachal Pradesh
- **Bronze Award:** Integrated Financial Management System (IFMS), Delhi

Online API Contest

During the Launch Ceremony on 12.12.2021, DG(NIC) launched the Online API Contest. The objective of the "Online API Contest" is to bring in awareness about APIs best practices in its design, development & implementation and to recognize the projects who have designed, developed and implemented APIs following the best practices.

The contest is open for all the NIC project teams. This contest is still on going where TAG has received APIs for 94 projects for the evaluation.

WebApp UI/UX Contest

Objective of WebApp UI/UX Contest: To recognize and award the best designed web applications developed for central Ministries/ Organisations, evaluated on the following two aspects:

1. User Interface Design

2. User Experience

Target Audience: NIC Headquarter

Evaluation Stages:

1. Stage -I Evaluation – All the web applications shall be evaluated by respective HoGs. The best Web Apps (max. 2) from each Group shall be forwarded by HoG for evaluation at next level.

2. Stage -II Evaluation – A Committee consisting of selected HOGs, SIOs, UxDT Div, TAG members and industry representative shall evaluate the web apps after Stage-I evaluation. Top 3 Web Apps shall be selected for awards.

Duration of the Contest: 26.07.2021 to 05.10.2021

Awards

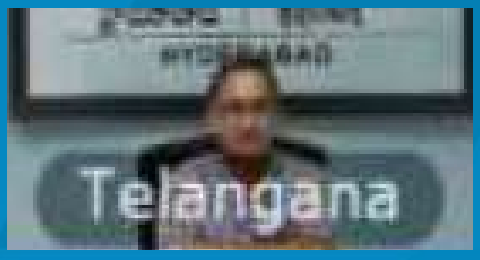
Recognize and award the best-designed web applications at NIC Headquarter level.

- **Gold Award:** S3WaaS (Secure Scalable and Sugamya Website as a Service), Web Technology Division
- **Silver Award:** National Food Security Portal, Food and Public Distribution Division
- **Bronze Award:** eSampada, Urban Development and CPWD Informatics Division
- **Bronze Award:** Sarathi, eTransport MMP Informatics Division

Ceremony of Felicitating the top achievers of Pan India Product Proliferation of key Products of NIC

The NIC PM & PMS (Parliamentary Matters & Programme Management Systems Division), organized an Award Felicitation Ceremony on 1st October 2021 to felicitate top three teams for "Pan India Product Proliferation of Key NIC Products". Dr. Neeta Verma, DG, NIC presided over the function and spoke to the NIC officers across the country witnessed over Video Conferencing and Webcast. She appreciated the milestones achieved by the officers and also acknowledged the great efforts put in by the respective state and district teams in the successful implementation of the NIC products across the nation.

Head of Group of each Key Product shared his/ her experiences about the conceptualization and proliferation of the product. DG, NIC in her speech to the nation-wide audience who witnessed the event over videoconferencing and webcast, encouraged the various teams to work on the revamping of their products as per the changing dynamics of the industry and focus on areas such as Microservices, Software as a Service (SaaS), Cloud, Security, Data Protection, Emerging Technologies, Containers and Kubernetes.



Kerala State

Delivering E-governance to the Door Step

Edited by **REUBAN K**

NIC Kerala is playing a pivotal role in bringing IT close to the citizens with its ICT initiatives. Had a significant role in empowering the State Govt during the COVID pandemic with the IT enabled services provided in mission mode. NIC has taken a remarkable advancement in mobile application development with various citizen centric services including National level Messaging App (SANDES). We also house National level mobile competency & Application Security centres.

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Kerala, popularly known as "God's Own Country" is situated in the south-western end of the Indian subcontinent bordered by the states of Karnataka to the north and Tamil Nadu to the east and by the Arabian Sea to the south and west; it also surrounds Mahe, a segment of the UT of Puducherry. Kerala has the highest levels of literacy in India. Kerala is one of the emerging IT destinations and has made its presence with high IT literacy, grass root level internet connectivity in urban and rural area and its contribution of highly skilled IT professionals all over the world.

NIC state unit was established in 1987. We have 14 district units, Data Centre, Network Operation Centre, NKN POP, Center of Competence for Mobile App Development established in Kannur district, Regional Centre of Excellence for Application Security (RCOEAS) established at Thiruvananthapuram. NIC was instrumental in bringing IT to the masses by undertaking major e-governance and citizen centric applications. It provides Gigabit connectivity to around 100 institutes in Kerala in addition to the Videoconferencing/ email/ Network/ Data Centre services.

ICT Initiatives in the State

PRICE (Project Information & Cost Estimation)

PRICE software is a revolutionary initiative of Government of Kerala which aims to unify the work methodology and rates across the state irrespective of Department and Organizations who use public money for infrastructure works. The enterprise version of PRICE application based on CPWD DSoR, incorporates all aspects of management of public works comprising of estimate preparation,RE, eMBook and eBills. A Contractor portal is also available as part of the PRICE software system, in which contractors can login to view their works and do all work-related activities online including contractor license registration and renewals. It is implemented in all engineering departments of Kerala and at MCD.

NICDSign (A Cross-Platform, Browser-Independent Digital Signature Solution)

https://nicdsign.kerala.nic.in

The NICDSign is a cross-platform, browser independent solution for digital signature using PKCS#11 tokens. The NICDSign is a client-based solution where the DSC capabilities are installed in the client machine as a background service. The DSC Signing solution overcomes the problem of applet-based DSC solutions due to the lack of browser support. The solution is also capable of signing PDF files with visible signature stamping in the document. NICDSign solution is supported in all the major operating systems viz Windows, Linux and macOS. The solution can be integrated by applications developed in Java, PHP and .NET etc.

The digital signature also provides a viable solution for creating legally enforceable electronic records. An applet based digital signature solution was developed and integrated with web applications developed using various technologies.

Ente Jilla

"Ente Jilla" which means "My District" is a mobile Application designed and developed by NIC. The App was customized for the use of all the districts of Kerala. This App was launched by the Hon'ble Chief Minister of Kerala as part of the 100 days programme and included in the CM's Priority projects. Th e concept is a very large whiteboard, which facilitates citizens to rate and review any office in the district based on their experience.

▲ Shri Pinarayi Vijayan, Hon'ble Chief Minister of Kerala inaugurating AIMS software and Mobile App

The objective is to improve the service delivery of the government right from its lowest level of establishment.

AIMS – Agriculture Information Management System

AIMS provide a single window facility for farmers to register themselves, declare land and crops being cultivated for availing various services from the Agriculture department without visiting the office. Based on this data, the farmer can submit online application for various services. Applications submitted by farmers will be processed by the concerned officials at Krishi Bhavan, Block, District and Directorate level offices and benefits will be transferred to eligible farmers using the Centralized DBT module of AIMS which is integrated with State Treasury.

Kerala Budget 2.0

Budget 2.0 is the software for preparing the Budget of the Kerala Government. The software manages activities like Budget Estimation, Preparation of Budget, Publishing Budget Documents, Additional Authorization, Supplementary Budget, Contingency Fund Management, Re-appropriation of Funds, Resumption, Regularization of Funds and Alteration Memorandum. Major functionalities are:

- The preparation of Budget by fixing of allotment for Demand, Revenue and Debt heads and the preparation of budget documents.
- Projection and analysis of non-Pan requirement
- Management of Post budget activities

▼ eDistrict transactions as on December 2021

Total Transactions so far	90347671
Total Transactions in this year	11835147
Total Applications so far	68247112
Total Applications this year	9968032

- Linking of Scheme wise data received from planning board and preparation of Plan Budget
- Preparation of Five-Year Plan Accounts

Integrated Financial Management System (IFMS)

Integrated Financial Management System (IFMS) is one of the prestigious Projects of Government of Kerala undertaken by Finance Department and Treasury Department. IFMS Kerala has been conceived in-line with the Modernization of Treasury Systems, which is one of the MMPs of Government of India. IFMS envisages end-to-end integration system among various stakeholders such as Finance Department, Treasury Department, Administrative and Line Departments, Accountant General, RBI and Banks.

National Knowledge Network (NKN)

National Knowledge Network (NKN - ISMS ISO 27001:2013 certified.) Point of Presence (PoP) was set up at National Informatics Centre, CGO Complex, Thiruvananthapuram and was formally inaugurated on 20 May 2015 by then Principal Scientific Advisor (PSA) to the Government of India. All the 14 NIC district centres in Kerala are connected to this PoP through 1Gbps/ 100 Mbps/ 34 Mbps links through NKN/ NICNET approved service providers. 99 Research & Educational institutes are connected to NKN through 1 Gbps link or 100 Mbps link.

NICNET Services

PAN India communication network for Central and State Government departments, PSUs/ autonomous institutions. LAN/ WAN connectivity and Internet services and 24x7x365 support. NICNET Services extended to all NIC Centres, FCI, Secretariat BOI/ FRRO, RGI, DGDE, DOP, CPWD, CBI, Spices board, AG office, Planning Board, Coir Board, MPEDA, High Court, District Courts, Lakshadweep Islands etc. Around 239 WAN connections and 3000 LAN nodes across Kerala.

Web Hosting Services/ Cloud Services

NIC Kerala State Centre provides web hosting and Cloud services (VMware and Open Stack) to State and Central Government departments in Kerala. Services offered are Infrastructure as a service (IaaS), Application and Database fine tuning, Server Hardening, Backup & Restore, Co-Location Support, State Data Centre Support, NDC – DR support, Load balancer for applications

Security Services

Securing Critical Government Cyber Infrastructure. VPN (IPsec and Web VPN) services are provided to the users. Perimeter Security – Firewall, IPS & UTM. End Point Security - Patch Management, Windows Software Update server and Antivirus solutions. Active directory implemented.

NIC Kerala's contribution in digitalising critical functions of Finance Department has been immense. A host of applications including Budget Estimation System (BEST),-Budget preparation system(Bougette),-Budget allocation and Monitoring System(BAMS),Core Treasury Information System(CoreTIS),e-Treasury, Bill Information Management System(BiMS), Core Treasury Savings Bank software(CoreTSB),Electronic Ledger Accounting Systems(eLAMS),Ways and means clearing system(WaMS),Bill Discounting system(BDS), SPARK(the HR and Payroll Management system for Govt of Kerala),EMLI, iSoft, Jeevan Rekha Software for bio-metric mustering of social welfare pensioners, GAIN PF etc. have been developed and implemented successfully in the Department with the help of NIC.

The above applications enabled the State Government to digitize the financial transactions in the State and integrate the same electronically with RBI, various banks and office of the Accountant General and other stake holders and ensured an end-to-end electronic flow of financial information. The Jeevan Rekha software enabled the State Government to eliminate large number of fake and duplicate beneficiaries from the pensioners' data base and could save crores of rupees to the State Government.

we are sure that NIC will continue to play a constructive and useful role in the future as well in enhancing efficiency of the Government's services for the citizens of Kerala.

RAJESH KUMAR SINGH, IAS
Additional Chief Secretary
Government of Kerala

▲ Inauguration of the State Election Commission Portal by Shri Arif Mohammed Khan, Hon'ble Governor of Kerala

Video Conference Services

NIC Kerala Video Conferencing Services facilitates Government departments for conducting meetings in a secured environment. Video Conferencing services are provided to Raj Bhawan, Secretariat, Office of the Chief Secretary of Kerala. NIC Kerala is also providing technical support and coordination to VCs conducted from The President House, PM Office, Central Ministers, Cabinet Secretary, and Ministries. VC Services are provided at 14 NIC Districts of Kerala. NIA Court Kochi regularly uses these services for hearing regularly.

Messaging Services

About 91,000 email accounts were created for officers and staff of State and Central Government departments in Kerala. NIC Delegated Admin Console has been set up for Kerala State IT

Mission, Secretariat, Niyamasabha. Paid services provided for Cochin Shipyard Ltd, KMRL Kochi, Spices board, Rubber Board, Coconut Board. Email Relay services provided.

Covid19jagratha

https://covid19jagratha.kerala.nic.in

Covid19 Jagratha information and management solution, conceptualized by District Administration and developed by the district is a simple and comprehensive pandemic management solution covering all aspects of a known solution for management of Covid Outbreak in an integrated workflow. It focuses on the approach of safe travel, safe quarantining, real-time surveillance and Health monitoring, Contact Tracing and Treatment, Containment & Cluster zone Mapping, Human Resource Mobilization, Hospital & Ambulance management, Event & visitor registration as an integrated system of handling covid19 outbreak effectively. More than 2 lakhs eighty thousand active users and 4,23,21,788 user hits as on 06-12-2021.

▲ Shri Mohan Krishnan P V, DDG & SIO receiving memento from Smt. Chinchu Rani, Hon'ble Minister for Dairy Development & Animal Husbandry

Nammude Keralam Mobile App

Nammude Keralam Mobile App – an initiative by the District Administration Kozhikode with a vision to create a platform for the citizens to 'participate, co-design and co-create' in governance. Provision for the citizen to interact for effective delivery of services, implementation of programs and participation in decision making It features citizen centric governance through prompt and effective service delivery, real time responsive administration thereby enhancing citizen experience. It also features Citizen Participation through Open governance, communicating information about departments and feedback, launching and participation in campaigns and discussion forums for citizens. Now it has been customized to roll out in the entire state of Kerala. Received Gold Award in District Governance Mobile Challenge (DGMC)

eDistrict Kerala (https://edistrict.kerala.gov.in/) eDistrict is a mission mode project under NeGP with a vision to make Government Services accessible to the common man in his locality, through Common Service Centres (CSC) which are easily accessible or through public portal and respective offices and ensure efficiency, transparency & reliability of such services at affordable costs to realize the basic needs of common man. eDistrict Kerala went 'Go-Live' in December 2010 with 23 certificate services of revenue department in two districts. Now the project is rolled out in all districts of Kerala with 49 services from different departments.

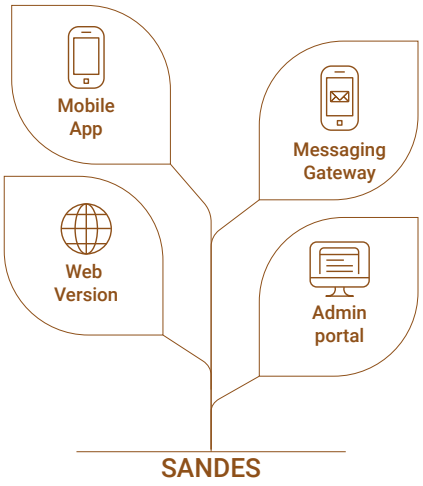
COMPOSE (https://compose.kerala.gov.in)

COMPOSE (Comprehensive Operations and Management of Presses Over Secure Environment) is an enterprise-wide total IT solution for the department of Printing, Government of Kerala. This covers all printing presses across the State, as well as all State government departments and agencies involved in publishing of Gazette in Kerala. e-Gazette Publication of Kerala Gazette was inaugurated by Hon. Chief Minister of Kerala Shri. Pinarayi Vijayan on 2nd October 2021. Gazette number 38 was published as the first online gazette which consists of notifications from different departments and citizens. All Extra Ordinary Gazettes (EOG) since then are published as e-Gazette using COMPOSE software.

SANDES

SANDES is an instant messaging platform developed for government and citizens. SANDES is managed by GIMS Division NIC Head Quatres and developed at NIC, Kerala State Centre. The development of SANDES (formerly GIMS) was kickstarted in July 2018. Since then, the SANDES development team in NIC Kerala was involved in the design, architecture and development of the platform consisting of the mobile app for both Android and iOS, web-based client, backend microservices, management portal and messaging gateway.

SANDES platform currently has 11.5 lakh registered users, with verified government users spanning 800+ offices across 180+ organizations



▲ SANDES Components

under 90+ ministries. A total of 4 Cr+ messages have been exchanged since inception.

Court Case Information System (CCIS)

Court Case related information system is developed for monitoring the cases pertaining to the Government, pending in various courts in Kerala. The details of cases are received from the office of the Advocate general and the same

is routed to the concerned department through CCIS. The system is integrated with the eoffice and the cases and any communication related to the cases are pushed to the related e-File in eoffice and all the noting, drafting and approvals are done in eoffice and while dispatching the final draft the same is sending to the Government pleader and the standing counsel concerned. The system is having dashboards through which the cases in various categories can be monitored. Department-wise dashboards and drill down reports are also available in the system.

PEARL SUITE (https://keralaregistration.gov.in)

PEARL SUITE- 'Package for Effective Administration of Registration Laws' of the department of Registration offers an end-to-end integrated solution connecting all stakeholders enabling cashless, less paper, secure and transparent electronic mechanism for property registration in Kerala.

PEARL SUITE Services includes Property Registration, Certificate Services – Encumbrance, List Certificate & Certified Copy, Marriage Registration and marriage certificate, Electronic Endorsement, Model Document, Chit Registration, End-to-end Mortgage Filing and Release [Gehan], Under Valuation Management and Decision Support Systems.

Revenue Recovery Online Portal

(http://rr.kerala.gov.in) is a centralized, workflow driven, online automated web application aimed to computerize Revenue Recovery activities. The system enables online file movement from requisitioning authority to the different levels in Revenue hierarchy, transparently thereby empowering all stakeholders.

Services include Online Filing of Requisition, Revenue Recovery Certificate generation with DSC, Demand Notice generation, Demand Notice serving, Revenue Recovery Collections, Remittances, Stay/ installments granting etc. Installment can be sanctioned by Minister/ DC/ Tahsildhar. ePayment of dues is allowed, integrated with the Revenue ePayment System.

SPARK

SPARK (Service and Payroll Administrative Repository for Kerala) is an integrated HR, Payroll and establishment accounts management system for all Government functionaries including legislature, Judiciary, executives, Schools and other educational institutions. It spreads across Grass root level offices like Village offices, schools, colleges, krishi Bhavans, Veterinary hospitals to higher level offices including Government Secretariat.

Objectives

- Digitization of Service Book of Employees
- A centralized database for HR, Payroll, establishment & Accounts matters
- Procedure linked; workflow-based HR activities/ Payroll works
- An integrated inter-operable data sharing system for e-Governance initiatives of Kerala

KSHEERASREE

This Portal is a bilingual interoperable collaborative system initially focused to on-board farmers, on-board schemes/ services and farmer registration life cycle activities. Eventually, the portal will be a comprehensive One-Stop-Shop for citizen related information and services. The main focus of the portal shall include Unique Smart Id to the farmer, Real-time data capture of Sales and Procurement of Milk/ Cattle Feed/ Mineral Mixture/ other Products, Quality based Milk Price Chart, Electronic Accounting System in Dairy Co-operatives, Automated Milk Quality Testing, On-time settlement Analysis & Reports, etc.

ReLIS (Revenue Land Information System)

This project is conceived as per the Digital India Land Records Modernization Programme (DILRMP) to computerize and update land records and to facilitate citizens to obtain all services online. The project also envisages the Revenue, Registration and Survey integration to do mutation online, pay tax online and issue Record of Right to the needy landowners. Complete Land Records Management with interfaces for systems other than property registration such as Land Acquisition, Land Assignment, Relinquishment, Bought in Land, Court Decree, Legal Heirship etc.

K-SWIFT

K-SWIFT (Kerala - Single Window Interface for Fast and Transparent Clearance) facilitates ease of doing business using ICT tools by integrating all the line departments using open API to bring under a common platform. Ease of Doing Business aims to create a single platform for providing the best support towards the prospective and existing business community in the state and drives forward the State's vision of prosperity for all by employing technology, innovation, inclusivity and sustainability as key factors for development.

Ration Card Management System (e-RCMS)

https://civilsupplieskerala.gov.in

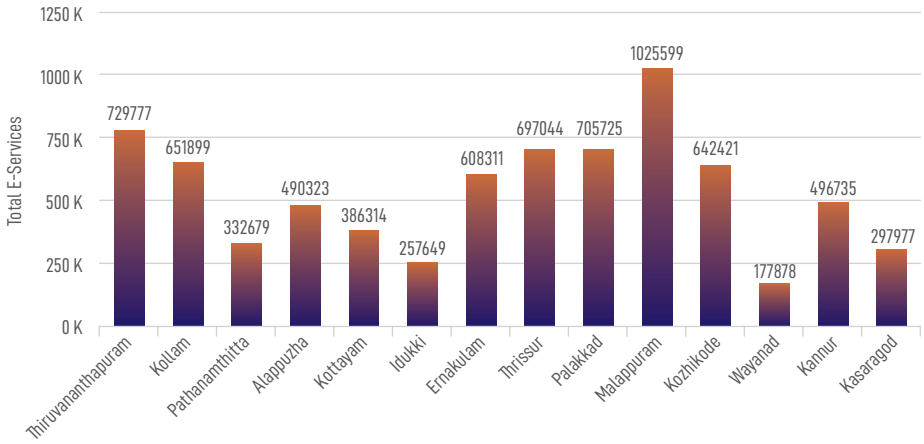
A complete automated Ration Card Management System (RCMS) implemented in Kerala. Approximately 91 lakh ration cards have been digitized in the State with aadhaar seeding done for 97% NFSA cards. e-Services-RCMS consists of 19 services related to Ration Card Management System. Citizens can apply online through citizen portal or approach any Akshaya center for submitting the online application. Application is integrated with e-payment of Government Treasury site for remitting the service charges Ration cards records are also integrated with Digi Locker. One Nation One Ration Card scheme has been implemented in the State.

▲ Launch of Card type Ration card in Kerala by Hon'ble Minister of Food and Civil Supplies

Kerala State Election Commission (KSEC)

This is an end-to-end system for KSEC. The election activities started with the preparation of the electoral roll. The Separate electoral roll is maintained by state election commissions for the local body elections. The portal has a provision to apply online for additions, corrections, transposition and deletion. The Electoral roll will be published before elections. The system includes preparation of election notifications, collection of nomination details, scrutiny, withdrawal, finalization candidates, randomization process for the posting of polling officials, mobile application for the collection

▼ Total E-services for Ration Card Management System (e-RCMS) till Dec 2021



▲ Inauguration of Online Gazette publication by Hon'ble Chief Minister Shri Pinarayi Vijayan

of hourly voter turnout & communication system, table-wise vote collection from counting centers during counting, results display system, declaration of result, update the bio-data of the elected members, election expenditure details collection and vacancy reporting.

Comprehensive System for Universities and Boards (CUBOS)

The system covers activities of universities and education boards. It includes Admission, Academics, Examination (Pre-Examination, Examination, and Post-Examination), Affiliation, Co-curricular. There are portals, dash boards, and home pages for various categories of users. Employees, Faculties, students, institutions are part of the system. There are seat management and configurable workflows. e-Services are part of this system. This is a configurable system and can be used for any university/ education board with minimum customization.

National / Regional Level Centres of Excellence

Mobile Application Development Competence Centre

One of the four Competence Centres for Mobile Application Development of NIC is established in Kannur, Kerala. The centre has started functioning since 2016. The centre now takes lead in empowering NIC Officers in mobile application development, mobile security and API security. The centre now provides consultancy service on design and development of mobile applications in native platforms as well as the hybrid platform - Flutter Framework. Competence Centre played a pivotal role in mentoring the State and District units of NIC during the DGMC and State Mobile Challenge 2021. This centre handles the Account for the iOS development subscription of NIC and is instrumental in iOS App consultancy services and its deployment.

Centre of Excellence for Application Security (CoE-AppSec)

Centre of Excellence for Application Security (CoE-AppSec), Thiruvananthapuram, Kerala is one among 5 regional centres set up across India to augment the security of applications developed in the concerned region. It was setup in 2018, to speed up audit clearance and ensure quality and standard for various applications developed by NIC. The centre is responsible for security audit and vulnerability testing of applications from 6 states of south India Viz., Andhra Pradesh, Karnataka, Kerala, Puducherry, Tamil Nadu and Telangana.

Other Important Web Apps

- **REALCRAft ver 2.0 :** Web enabled workflow based online application system for issuing Registration Certificate (RC) Under MS Act (Merchant Shipping) and Fishing License Certificate (LC) to fishing vessels
- **Lab Diagnosis Management System (LDMS)** (labsys.health.kerala.gov.in)**:** An online platform for data collection and reporting of COVID19 test results in the State
- **SAGARA :** Developed for ensuring fishermen security, focused on monitoring the movements of fishing vessels and registering the crews going for fishing operation
- **National Biodiversity Management System:** Unified web based interoperable collaborative & open-source framework application which facilitates LSG/ citizen to collect (decentralized), disseminate biodiversity data and generate PBR electronically
- **KCIS (Centralized Inspection System):** The Govt. of Kerala has undertaken several inspections related reforms, this is an online system to carry out all inspections on a single platform
- **LOTIS- Supply Chain Management Information System:** LOTIS - Lottery Information & Management System is a digital tool for Digital Transformation in State Lotteries Dept
- **UniSPARK/ G-SPARK:** SPARK has been customised and implemented for Universities in Kerala and Grant-in-aid institutions as a separate instance
- **Workflow System for RTI Second Appeal/ Complaint Petition for Kerala State Information Commission:** A web enabled solution for filing Appeal Petitions (AP) and Complaint Petitions (CP) online and subsequent workflow activities Website: https://rti.sic.kerala.gov.in
- **GAINPF (Govt Aided Institutions Provident Fund):** PF activities of all Government Aided Institutions are brought under a single umbrella using GAINPF
- **VAHAN & SARATHI:** The Vahan & Sarathi Software developed by NIC HQ has automated all the processes at the RTO level thereby making the delivery of services faster and transparent
- **e-Challan:** Application comprising Android based mobile app and web interface for the purpose of providing a comprehensive solution for Transport Enforcement Officers and Traffic Policemen
- **e-Nidhi** (https://enidhi.kerala.gov.in)**:** A web-based application (in LAPP platform) for streamlining the core activities of Kerala Toddy Workers Welfare Fund Board (KTWWFB)
- **Effective Monitoring of Letter of Credit Issuance (EMLI):** Developed for Finance Department for automating the Issuance of Letter of Credit (LoC) based on the bills submitted by various division/ sub division offices of work executing departments
- **Bill Discounting System (BDS):** This facilitates the contractors to get their bills cleared in a discounted rate on priority and with assurance. Work executing contractors can opt their bills to process through BDS
- **Campus*Suite** (https://dme-ecampus.ac.in) **:** A workflow-based application for catering all needs of an academic institution having class room studies and clinical postings
- **Computerization of Industrial Tribunals, Kerala (KITS)** (https://kits.kerala.gov.in) **:** Main objective of KITS is to handle various industrial disputes related to employer and employees
- **AVAKASAM** (avakasham.kerala.gov.in) **:** Developed during LAC Election 2021 to monitor Postal ballot distribution
- **Oxygen Demand Supply Chain Management Portal :** A Comprehensive Total Oxygen Management Solution to handle the oxygen supply in real time. This is used to monitor the supply of oxygen and to effectively handle emergency situations at various government and private hospitals treating Covid-19 patients
- **NEO CRADLE** (https://neocradle.kerala.gov.in) **:** A comprehensive Newborn Care Management System is an initiative of NHM Kozhikode
- **DELTA – Delivering end-to-end Land Transaction for Acquisition – Revenue Department :** DELTA aims to enable government to acquire land for public purposes from people offering compensations as per Kerala Land Acquisition Act

- **Online Scholarship Management System :** Facilitate various governing bodies for an efficient, foolproof system to enable the students for applying online, and the selection of the eligible students up to the disbursement of scholarship to their bank accounts
- **Kerala Service through Service Plus :** ServicePlus (https://serviceonline.gov.in) is a metadata-based e-Service delivery Framework which is built on LowCode–NoCode (LCNC) architecture
- **PG Portals for LSGD & Civil Supplies department of Kerala -** (http://pg.civilsupplieskerala.gov.in, https://pglsgd.kerala.gov.in) **:** Public Grievance Portal for Food & Civil Supplies and Local Self Government Department is an online grievance monitoring and redressal system
- **Digital Payment System :** Developed for Directorate of Technical Education and Directorate of Collegiate Education. The portal caters the students and institutions to pay students' fees towards Government, Universities as well as Institutions
- **eOffice :** eOffice is a Digital workplace solution for Government Offices. It automates the entire work flow of file processing starting from Tapal creation, File Creation, File processing and issuing orders from the file
- **TREND - Election Result dissemination system :** Kerala state election department implemented the TREND system as the source of data for the media centres, visual & Print media and web
- **e-Employment Exchange System :** The total computerization of employment exchanges, Job portal & Job fest
- **SECURE (Software for Estimate Calculation Using Rural rates for Employment) for MGNREGA Works** (http://secure.nic.in)**:** SECURE is a workflow based application for creating estimates for MGNREGA works and according AS/ TS
- **BIOMIS :** BIOMIS is a unified web based interoperable collaborative & open-source framework application which facilitates LSG/ citizen to collect (decentralized), disseminate biodiversity data and generate PBR electronically
- **FIMS – Fishery Information Management System :** A single window facility for fishermen to register themselves and submit application for availing various services from Fisheries Department
- **Online Treasury Savings Bank -** (https://tsbonline.kerala.gov.in) : Core Banking System for Treasury Savings Bank Account holders
- **Pensioner's Portal -** (https://pension.treasury.kerala.gov.in) **:** Information and service portal for Pensioners

Other Important Mobile Apps

- **SELF :** A work flow based integrated system, integrated with ReALCRAFt, FIMS, SAGARA to streamline the fuel card distribution to the registered vessel owners and fuel distribution to the valid fuel permit holders
- **Revenue eServices & Mobile App :** Mobile app for all the revenue services
- **SAGARA Mobile Application :** To help the Fisheries Department to keep an up-to-date entry and exit of vessels and fishermen venturing in to the sea
- **AIMS Mobile APP :** Facilitates the farmers to submit application for different schemes being implemented by the Agriculture department and also to avail the benefits without visiting the office
- **mSevanam Mobile App :** Platform to avail all online services offering from various government departments under a single umbrella
- **Ente Ration Card ('My Ration Card') :** Rendering all services available on the web based e-RCMS application made available for card holders
- **Poll Manager Mobile app and Poll Manager Dashboard :** Comprehensive election communication system. This android app along with Poll Manager dashboard is used for capturing the Voter Turnout online and their data management
- **TSB Mobile App :** Online Treasury Savings Bank - Core Banking System for Treasury Savings Bank Account holders
- **Pensioner's Mobile App :** Information and service portal for Pensioners

Accolades

Award Name	Project Name	Category	Year
18th CSI SIG e-Governance Special Recognition Award	Covid19Jagratha	Local Government project Category	2020
Gems Digital India Award	Covid19Jagratha	Analyst's Choice	2020
Gold Award	Nammude Kozhikode Mobile App	District Governance Mobile Challenge (DGMC)	2021
CSI SIG e-Governance awards 2020	e-District	Award of appreciation under sustenance category	2020
CSI SIG e-Governance Awards of Appreciation	eDistrict	Sustenance Category	2021
18th CSI SIG e-Governance Awards	SPARK	Award of recognition (state Govt projects)	2020
CSI SIG eGovernance	RealCraft	Awards of Appreciation under Sustenance Category	2021

Visit of VIPs to NIC State Office or NIC Events

Hon'ble Minister of State for Skill Development and Entrepreneurship and Electronics and Information Technology,Govt. of India, Shri. Rajeev Chandrasekhar during his visit to Thiruvananthapuram on 13th November 2021 took a review of SANDES, the Instant Messaging System. SIO Kerala apprised the status and the Hon. minister asked NIC to increase the footprint of SANDES by proliferation within Government and outside Government. Minister advised to focus on adoption of SANDES.

Way Forward

NIC Kerala look forward to continuing the engagements with the State in its efforts to make Kerala a 100 percent ICT enabled state fulfilling the vision of Digital India Initiative. Leveraging on latest technologies and adoption of emerging ICT advancements for the advantage of eGovernance will make the mission possible. Focus on capacity building and technology update of NIC manpower will contribute to the better and fast delivery of solutions in the ICT arena of the State. Cyber Security, Blockchain etc. will be the focus area. Migration of legacy application to the latest technology with Microservices, common API Gateway and mobile first approach will take us to the desired goal.

Contact for more details

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Howrah, West Bengal

Citizen-Centric Digital Governance using cutting edge technologies

Edited by **Dr. DIBAKAR RAY**

NIC Howrah District Centre has participated in the development of "AI-enabled early screening of Covid 19 using Chest X-Ray images" and the Development of Face Recognition based Attendance System (FRBAS) for contactless attendance under the guidance of CoE-AI, NIC Hq. NIC Howrah District Centre has also developed an "AI-enabled mobile app for tracing Missing Children" under District Governance through Mobile Challenge (DGMC).

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Howrah is located on the western bank of the Hooghly River opposite to its twin city of Kolkata. The history of Howrah dates back over 500 years! Major attractions of the Howrah District are: the iconic cantilever Howrah Bridge or the Rabindra Setu, the Indian Botanical gardens, Belur Math, Panitras Samtaber, Garchumuk, Gadiara, Vidyasagar Setu, and Santragachhi Jheel are among the few. It is also known as 'Sheffield of the East' due to its cluster of small scale industries. The State Secretariat 'Nabanna' is also located in Howrah District.

Overview

Since its inception in the 1980s, NIC Howrah District Centre is pioneering in designing, developing and implementing ICT projects to use scientific and technological means to assist the District Administration in good governance. It is supporting the District Administration in the implementation of various flagship eGovernance programmes of the Government. NIC Howrah has been facilitating system study, technical consultancy and innovative use of ICT tools and established a state of the art communication system for providing efficient G2G and G2C services by the District Administration. Howrah District Centre is actively engaged in developing various AI-based tools in different eGovernance sectors.

Development of cutting edge eGovernance solutions using Emerging Technologies

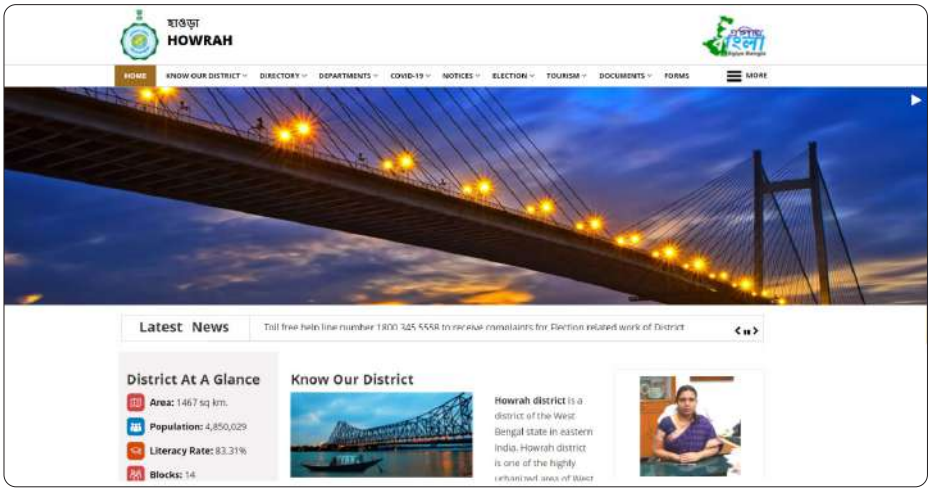
NIC Howrah District Centre is involved in the development of "AI-enabled early screening of Covid 19 using Chest X-Ray images" and the Development of Face Recognition based Attendance System (FRBAS) for contactless attendance under the guidance of CoE-AI, NIC Hq. NIC Howrah District Centre has also developed an "AI-enabled mobile app for tracing Missing Children" under District Governance through Mobile Challenge (DGMC).

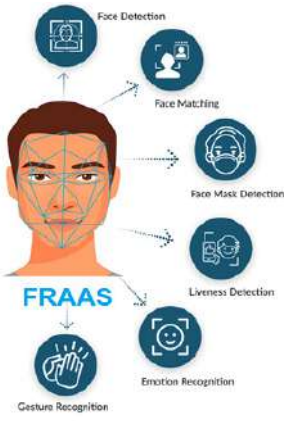
ICT Initiatives in the District

Online performance monitoring system of various schemes

The online performance monitoring system provides a dashboard for the district administration, line and engineering departments in the district for the review meetings held from time to time at district and block levels. The

▼ District Website Howrah





stakeholders can create custom reports and insights on the progress made under different schemes.

- Customizable dashboard using filters on schemes and locations
- Comparative analysis with previous progress.
- Customizable alerts on schemes based on physical and financial progress
- Generate 54 point report for review meetings, scheduling of meeting and broadcast notification, user-level notification and user-specific notification
- API for fetching existing Portal's data
- Multi-modal Accessibility

Online Recruitment Management System

NIC Howrah District Centre has developed an Online Recruitment Management System through which the entire application processing of recruitment can be managed. The candidates can fill up an online application form, get an acknowledgement slip, download admit card, check the status of the application, and know the result of the recruitment Through this system.

Online Police Verification Reporting System

This software facilitates online processing of the entire Application Life Cycle for Police Verification Reports. This would reduces the turnaround time and improve accuracy and traceability.

Other Key Initiatives in the District

General Elections

In addition NIC Howrah District Centre has provided extensive technical support and related services during Parliamentary & Legislative Assembly Elections. Activities such as Polling personnel data management through the WBPPMS portal, Polling personnel and Counting personnel randomization, party formation, training allocation, with various reports and allied activities were undertaken.

District Website

District Website howrah.gov.in has been newly designed and developed using the Secure, Scalable & Sugamya Website as a Service (S3WaaS) platform. The Website provides comprehensive information on the spectrum of domains like history, tourism, art, culture, handicraft, flora and fauna, access to utilities, government schemes and citizen services related to the Howrah district.

eOffice (https://howraheoffice.wb.gov.in/)

eOffice has been implemented in more than 100 nodes covering all offices of the District Collectorate. The eOffice project was inaugurated on 1st August 2019 by Smt Mukta Arya, IAS, District Magistrate & Collector, Howrah.

NIC Howrah District Centre has also participated in beta testing of Sandes, the Government Instant Messaging System.

Technical Support

NIC Howrah District Centre has provided statewide technical support to flagship projects such as Kanyashree, SaboojSathi, Utkarsh Bangla, Rupashree, Banglar Siksha etc.

NIC Howrah has provided technical support for the implementation and roll-out of State-level flagship projects like Duare Sarkar, Laxmir Bhandar, Jaibangla and National level projects like e-Procurement, e-Prosecution at Howrah district. Also, technical support has been extended for nationwide users of National Tracking System of Missing and Vulnerable Children – TrackChild 3.0.

Data Analytics Dashboard

NIC Howrah has also developed a prototype Interactive data analytics dashboard using the latest open-source data visualization tools which may be used in various eGovernance Projects.

Network and Video Conferencing Services

NIC District Centre Howrah has 2 number of 34 Mbps (BSNL and PGCIL) links. NICNet Connectivity of NIC Howrah has been extended to more than 100 user nodes. NIC has a Video Conference Hall with the capacity of 20 Participants which supports video conferencing services at all levels. It has also facilitated extensive use of web VC since the Covid-19 pandemic.

Adopting digital governance is the need of the hour. NIC Howrah has played an important role by developing ICT projects like the new District website in S3WaaS Framework, Online Police Verification System, Online Progress Monitoring System, Online Recruitment Management System and is supporting many other State Government's flagship projects, ICT infrastructure and services which is pivotal for the District Administration in serving the citizens. Our digital initiatives have improved the participation of citizens, created ease of service delivery, resulting in good governance.

MUKTA ARYA, IAS
District Magistrate, Howrah

Awards

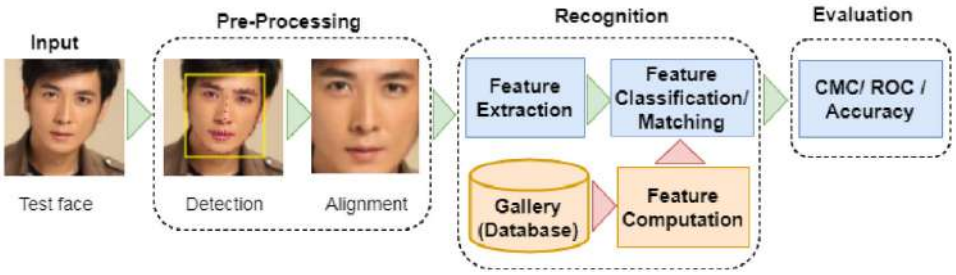
Officials of NIC Howrah District Centre have participated in the development of different flagship programmes of Govt of West Bengal which has won various national as well as international recognition in recent years.

- **Kanyashree Online:** National eGovernance Award, UNPSA Award, UN WSIS Award
- **SaboojSathi Online:** National eGovernance Award 2019, UN WSIS Award 2019
- **eGovernance Portal of Utkarsh Bangla:** UN WSIS Award 2019

Way Forward

Keeping up with the latest technological advancements, NIC Howrah is spearheading development of cutting edge solutions for facilitating good governance by leveraging the potential of AI, Data Analytics, Mobile applications and web-based applications.

Components of Face Recognition System (FRS)



Contact for more details

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The Nilgiris, Tamil Nadu

ICT Initiatives in the Queen of Hill Stations

Edited by **REUBAN K**

NIC, The Nilgiris, since its formation has been facilitating District Administration with its state-of-the-art ICT services and has spearheaded many ICT projects. The unit has played a significant role in most of the successful projects, so as to leverage the e-Governance scenario in the district.

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The Nilgiris, one of the oldest mountain ranges is located at the tri-junction of Tamil Nadu, Kerala and Karnataka. The Nilgiris is a part of the Western Ghats. Ooty the "Queen of Hill Stations", Coonoor 19 kms from Ooty and Kotagiri 31 kms from Ooty, are the three famous hill stations of this district. NIC District Centre was established in The Nilgiris in 1987 and since its inception, it has been providing pivotal support to the District Administration in implementing ICT projects to enable e-Governance.

ICT Initiatives in the District

Covid-19 RTPCR Result Portal

In Containing Covid-19, RTPCR Testing and Result dissemination play a key role. NIC, The Nilgiris developed and implemented a G2C application for RT-PCR Result dissemination and it is being used in 11 other districts. More than 30 lakh results have been uploaded. District health officials upload the data in excel format, citizens download the result using srf-id and mobile number. Vital details embedded in QR Code can be read and checked without internet connectivity.

Major impact is that 30 lakh people could know their result or get Positive / Negative Certificates without visiting the Government offices.

E-Pass Application

- Designed and implemented e-Pass System in Nilgiris District successfully when the lockdown was declared. More than 5,000 applications were processed using this system. The web application features QR Code authentication and Email alerts during Application Submission and Application Disposal
- More than 5 lakh Customized targeted Covid-19 awareness messages were sent through NIC's QuickSMS Service
- Video Conferencing during Covid-19 Pandemic
- With NIC's Technical Support, more than 200 Local Video Conferencing sessions were conducted by District Administration during Covid-19 pandemic, thereby ensuring seamless working of Government machinery even during lockdown period
- A dedicated website https://nilgiris.nic.in/covid19/ has been set up and all information related to Covid-19 awareness was made available to citizens

Website of The Nilgiris District

NIC, The Nilgiris regularly maintains and updates the District Administration's website (https://nilgiris.nic.in). The revamped website provides enhanced and user-friendly functionalities and interfaces in compliance with the Guidelines for Indian Government Websites (GIGW) and robust security standards on S3WaaS platform.

"Administration will be an easier task when coupled with technology. Results, outcomes and strategies can be evaluated concurrently with judicious use of technology. At the helm of the District Administration numerous tasks vie for the attention of the Collector. In The Nilgiris district, we have leveraged the use of technology in reducing time, effort and quick delivery of services to the public. And leading by example is the application developed by NIC in Covid Management.

RTPCR Testing and Result dissemination were done by an Online application developed by NIC. This helped District Administration to disseminate test results in a timely manner. This software is now being used in 11 other districts.

Communication - an important tool to take administration to the grass root level. NIC – The Nilgiris has helped District Administration in real time communication with District Level as well as field level officers using Video Conferencing facility throughout the lockdown period and thereafter.

NIC's active Role during Assembly Election – 2021 is highly commendable."

J. INNOCENT DIVYA, IAS
District Collector
The Nilgiris

Other Key Initiatives

Support for General Election to Tamil Nadu Assembly 2021

NIC Played an Active role and extended technical support in conducting Assembly

Elections – 2021. Training and technical support were provided for various software of ECI.

Court Case Monitoring System

Implemented Court Case Monitoring System, so that District Administration can monitor Court Cases Pending at Different Courts.

AEBAS In Schools

Aadhaar Enabled Biometric Attendance System is implemented in 179 School Locations and 2169 Teachers are registered.

Land Records

Implemented Collab Land, Tamil-NILAM Rural and Urban Modules in all Taluks.

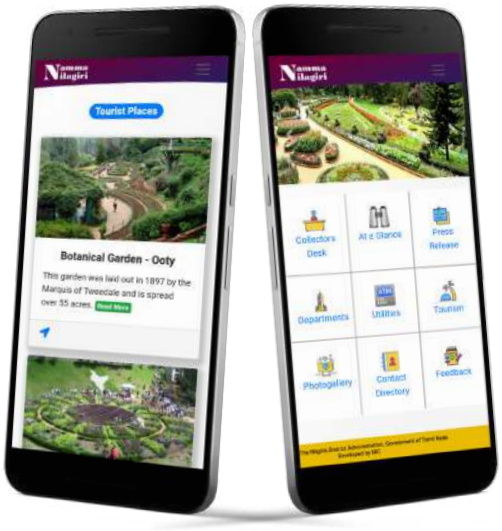
Social Security Schemes

- Support for OAP Back Office Applications for the benefit of 24,000+ beneficiaries
- Support for CMUPT Back Office Applications for 18,000+ Farmers

400+ High-Definition Video Conference services covering CIC, Central and State Government Departments annually.

Accolades

- MAAS DA – Mobile App as a Service for District Administration, a framework for developing Mobile App designed and developed by NIC, The Nilgiris won Award under Innovation Category in District Governance Mobile Challenge '2021
- DIO, The Nilgiris, Shri K. Ganesh, won the Silver Award in Techgov '2019 Competition conducted by NIC



▲ Namma Nilagiri App

Way Forward

NIC, The Nilgiris is committed to provide efficient and total ICT support to the District Administration and field level offices of the State and Central Governments in the District. Various G2C Applications are under development that will reduce citizen footfall in Government Offices.

Contact for more details

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NIC - The Nilgiris District Centre, Collectorate Campus,
Ooty, Tamil Nadu - 643001
Email: dio-nil@nic.in, Phone: 0423-2441529

▲ Website of The Nilgiris District

▲ Smt. Supriya Sahu IAS, monitoring Officer of The Nilgiris District along with Smt. J. Innocent Divya IAS, District Collector, The Nilgiris District inaugurating the RTPCR Result Dissemination Portal.

▲ Dr. Neeta Verma, DG NIC, conferring the District Governance Mobile Challenge 2021 Award under Innovation category for "Namma Nilagiri"

Parbhani, Maharashtra

Round the clock ICT support during COVID-19 Pandemic

Edited by **REUBAN K**

Besides the regular technical and infra support for implementing various State and Central eGovernance Projects at grass root level, the NIC Parbhani District Centre has been instrumental in enabling ease of access to the public services provided by the various government departments in the district.

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Parbhani, previously Prabhavatinagari, takes pride of a great heritage of ancient temple architecture and sanctified by the residences of many great saints. Parbhani is one of the eight districts in the Marathawada region of Maharashtra state. This district is divided into 4 revenue sub-divisions, Tahsil blocks, 704 Gram panchayats and 848 Revenue villages. A majority of people are in the rural area and the local economy is based on agriculture with 3.48 Lakh total farmers, and most of them are marginal and do small-scale farming. An Agriculture University is also situated in the district.

The NIC District Centre at Parbhani was established in the year 1989. The district centre provides regular technical and infrastructural support in implementing various State and Central eGovernance Projects at grass root level. Besides, the Centre provides ICT-based solutions to the District administration enabling better services to citizens to ease their living.

ICT Initiatives in the District

The NIC Parbani Centre has been involved in a number of ICT-based projects and initiatives in the district, and some of them are ongoing.

Application of Drone Technology

System for controlling and monitoring the illegal excavation of minor minerals in Parbhani district. It offers a mobilization of imaging service at various desired locations.

Software for Online entry of Essay competitions

Application to facilitate participants to submit online entry for the competition and avoid manual rush and manpower to collect the nominations.

Technical support for Transfers

Online support for Transfer of employees of revenue department within Parbhani District through counselling.

The prominent National and State eGovernance projects successfully implemented in the district are:

- Digital India Land Records Modernization Program (DILRMP)
- Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)
- The Integrated Road Accident Database (iRAD)
- RTI Request & Appeal Management Information System (RTI-MIS)
- eProcurement and GeM
- Revenue Court Cases monitoring EQJCourts
- National Social Assistance Program – NSAP
- ePDS
- VAHAN and SARATHI software for RTO

"The effective use of ICT and the digitization has simplified the administration process and brought transparency in delivering services to the citizen.

The proactive participation of NIC has resulted in effective use of ICT in District Administration. The technical support provided by NIC is the backbone of the successful implementation of e-Governance projects in the District."

AANCHAL SOOD GOYAL I.A.S
District Collector & Magistrate
Parbhani

- E-Property Cards and eMojani
- Pradhan Mantri Gramin Digital Sakharata Abhiyan (PMG-DISHA)
- Jeevan Pramaan
- Online submission of Performance Appraisal Reports (PAR)

Other Initiatives

The COVID-19 Pandemic has transformed the system in which the administrative activities were conducted. Utmost priority was accorded for the preventative measures to avoid the spread of virus. NIC District Centre has initiated various innovative projects during the pandemic and has been effective in supporting citizens to access various government services.

Online reporting of activity of NGOs and Agencies

(http://pradhikaran.pbnshop.in/)

An online application was developed to record the activities of various NGOs and Agencies those

engaged in humanity services of supply of food, grains, water, medicals to the needy.

PBNShop - online grocery application for citizen

Upgraded to include vegetable baskets and became popular during the lockdown due to Covid19 pandemic.

Online Registration of Farmers for selling Cotton crops

An application for farmers to register themselves for selling cotton crops. More than 48000 data is collected through this system and classified as per the APMC names and the scheduling was done by APMC for cotton purchase.

Scheduling the registration of documents

The online data for registration was categorised on the basis of resident address of the buyer, seller and witness and the permission granted along with scheduling of the registration process. Around 8000 registrations were recorded in the process. About ten registrations were done every day and a pre-initiation intimation is sent to the citizen through SMS.

▼ I-RAD Training to Police Department (Year 2021)

▼ PM KISAN HelpDesk for Farmers at NIC

▼ Training using A to Z AEBAS Tutor (2019)

Doctors Registration and Daily Reporting System (https://www.collectorpbn.in/hics/)

A real time information on the number of occupied and non-occupied beds of various hospitals in the District. Availability of medical resources is also provided in the system.

Divyang Database

A database of Divyang persons is built with an online application to ensure the specific helps and assistance during the lockdown period.

District COVID Dashboard

https://parbhani.gov.in/covid19dashboard/

A online application to publish the real time statistics of the number of COVID patients and the bed availability positions at COVID centres in the district.

Front-line workers and health workers data collection

Events, Trainings and miscellaneous

Several capacity building programs were organised by the District Centre for various kind of participants on eGovernance applications.

- A Lecture on "Cyber Security – Best Practices" to CSC operators
- A Lecture on "Future trends in Computer Technology" to Under-graduate students
- A Lecture on "Safety Tips for Digital World" for government employees
- A Lecture on "Digital Journalism: Opportunities and Challenges"
- Live Streaming: The Republic Day and Marathawada Mukti Sangram Day
- Key Note Speaker at Online Conference on Trends of future Technology

Technical member of various committees

- Technical Member of District Setu Samiti
- Member of District DBT Working Group for monitoring the selling of fertilizers through POS
- Member of CCTV Project Monitoring Committee at District Court, Nanded
- Member of PMGDISHA – District Level Committee
- District Level Task Force for COVID19
- District Level Monitoring of ePeekPahani (EPP)
- District Level Implementation Committee for PM-SYM & NPS-Traders Yojana
- District Level Coordination Committee for Economic Census 2020
- Kendriya Vidyalaya Management Committee

Accolades

- Order of Merit Certificate by Skoch Group for Effective use of Information Technology during COVID-19 under "Response to COVID" category
- At Stage 2 of Prime Minister's Awards for Excellence in Public Administration, 2020
- Improving Service Delivery and Redressal of Public Grievances category
- Video Tutor for AEBAS (Year 2018)
- Developed a Video Tutor, "A to Z AEBAS" for operational training to AEBAS users in Marathi Language upto the village level.
- NIC Film on Special contribution during COVID-Parbhani
- A short documentary film of Parbhani District was published by the the Media Group of NIC HQ.

"I would like to put on record the contributions of NIC-Prabhani for their digital initiatives in the culturally rich district of Maharashtra. Team is continuously supporting operations of many ICT services that reduce gap between administration and common man. Efforts of NIC officers are appreciated for IT empowerment of adminstration.

I wish that district of Prabhani achieves new heights in technology in e-Governance sphere."

Dr. RANJNA NAGPAL
Deputy Director General &
Maharashtra State Coordinator, NIC

Summary

NIC Parbhani has relentlessly worked as an integral part of the district administration which has been initiating, promoting and implementing various ICT enabled services in the district. The Centre is dedicated and committed to offer complete technical support for ICT based services of the various entities of district administration.

Contact for more details

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Securing Endpoints

Protecting a New Frontier in Cyber Warfare

Edited by **MOHAN DAS VISWAM**

Perimeter has long been a preferred war zone for the adversaries and defenders of the cyber space. No more. The long battle has ensured that technologies have become mature enough to make it extremely difficult and costly for adversaries to attack and successfully breach a properly protected perimeter. It has led to the shifting of action to users' devices like desktops, laptops, tablets and mobile phones. So, endpoints have become a new frontier in Cyber Warfare.

The endpoints in government / public sector ecosystem are mostly autonomous housing sensitive data which needs to be strictly compartmentalized. Typically, there is no single authority which should have access to all of users' data even within a single department or organization. This makes securing these endpoints extremely challenging as most of advanced enterprise endpoint security solutions are designed to transfer control of endpoints from users to technical experts called administrators which is not a desirable model for this ecosystem. So, in this article, we will try to formulate a set of best practices to secure autonomous endpoints by relying on a combination of less intrusive technologies and greater emphasis on user cyber hygiene.

Importance

The security of the endpoints, especially the autonomous ones, is the primary responsibility of the user of that endpoint. IT support will ensure that the perimeter, the local network and the data centers are well protected but a compromised endpoint can undermine all the security measures outside of the endpoint. So, the security of the endpoint is equally important, if not more, than the security of the environment. The tricky part is that the users of endpoints are typically normal people and not cyber security experts which makes protecting the endpoints even more challenging. It also brings us to the most important and ignored component of the security chain viz. education, training and sensitization of users of these endpoints. In order to understand the importance of the fact, let us think about the latest and deadliest agent of our times – Coronavirus. The best way to protect oneself from Coronavirus disease, as highlighted by almost all the health experts of the world, is PREVENTION and it involves the most basic hygiene principles taught to us since pre-school viz. keep hands clean, wash them regularly, sneeze or cough with face covered etc. Coronavirus has reaffirmed that strict adherence to the basic hygiene can protect us even from the most dangerous of adversaries. The same principle holds good for cyber security as it does for health security. If the endpoint and the data stored in it is an integral part of our life, then it is our responsibility to follow the basic cyber security hygiene principles proposed in this article like we do for our health and prevent compromise as 'Prevention is better than cure.'

Although prevention reduces the chances of compromise to a large extent, it does not guarantee 100% safety. Even after strict adherence to the best practices, there can be some persistent and well-resourced adversaries which may be able to compromise the endpoints. It means that though prevention should be our focus, we must also plan for minimizing loss and speed-up recovery in case of a compromise also called MITIGATION. In this article, we will also try to frame some basic mitigation principles like first-aid for cyber compromise.

Prevention Principles

Prevention requires actions from both technical architects as well as end users. In this article, we will focus on actions to be taken by end users for the sake of simplicity and clarity. The following principles can help end users use their endpoints safely and securely,

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- **Compartmentalize:** Today each individual who is working is typically assigned a device. The devices are no longer shared. User's device is her/his responsibility along with the data stored on it. Same is true for personal devices. The data sensitivity is different for official and personal devices so is the security architecture of the devices. Hence, in order to prevent cross contamination and inadvertent data leak/ loss, it is recommended to use official devices for carrying out official business and personal devices for personal business. It is also advisable to use as few devices as possible as it is easier to manage and secure.
- **Say 'No' to Pirated Software:** Free copies of expensive software are almost irresistible to users. They seem to be a product of goodness of humanity almost too good to be true. But as an old adage goes, there are no free lunches in this world. The 'free' copies are actually not free. They charge by compromising the endpoint, giving its control to the attacker and loss of data with the user being oblivious to it. Hence, it is recommended to use genuine operating support and software with patching support to ensure latest security updates for the operating system. DO NOT use pirated software as they are generally laced with malware.
- **Adopt FOSS:** There is a class of software created out of sheer goodness of human nature called Free and Opensource Software (FOSS). The developers create the software and dedicate them to the community for free use, development and maintenance. These can be used as is or customized based on the needs of individual users. The motivation for FOSS is enhancement of human knowledge and use of this knowledge for the better of one and all. The most common and powerful example of a FOSS is the Linux kernel which drives the world ICT today. The users are recommended to look out for opensource alternative of the software they need as they are available in plenty today. Their source code is freely available to anyone who wishes to verify it, hence chances of malicious code in them are quite low compared to a closed-source software.
- **Avoid PUA:** As more and more software / apps are installed on a device, the codebase installed on the device increases and along with it its attack surface. More the number of lines of code running on a device more are the chances of some of them being weak or vulnerable. Vulnerable code makes it much easier for attackers to compromise the device and take control. So, it is recommended to install software which are regularly used and remove all Potentially Unwanted Applications (PUA) from the device. Also, remove software which are not regularly used after their use to reduce the attack surface.
- **Update, Update, Update:** Updating or patching the installed software / apps is the single most potent tool in the lay users quiver to ward of the resourced adversaries. Imagine a security hole already present in a software but not known to anyone. The software is safe for now as the hole is not known to anyone. As soon as a fix for that hole is released by the software provider everyone knows about the hole. Now the same software becomes extremely unsafe as the world knows about the security hole and it can easily be exploited to compromise the device. So, updating the software as soon as the patch is released is not a luxury but a necessity.
- **Endpoint Security Agent:** Just like an external sentinel is important to guard a physical premises, a third-party virtual sentinel is essential to maintain the security of user devices. Any good endpoint security agent like an antivirus, endpoint detection & response (EDR) etc. must be installed on the user devices to protect the device from adversaries. It is recommended to install a good endpoint security agent, keep it updated and running at all times.
- **Least Privilege:** Need-to-know is an established principle of information secrecy. Least privilege is an extension of the same principle. It means that each user should be given access / privileges based on her / his need. This principle helps in minimizing damage if an account / access is compromised. It can be used as following: Create two accounts in Windows viz. user with administrator privileges (admin) and user without administrative privileges (user). Use user account for daily access and admin account only when needed to install software or make system level changes.
- **External Attachments:** External attachments like USB drive, portable disks, CD/DVD disks etc. are exploited rigorously to infect and compromise devices. Once an external storage disk is attached to a compromised device, it is infected and when an infected disk is attached to other devices, they can also get infected. Thus, creating a chain of infection. So, it is recommended to avoid using unknown removable drives like portable hard disks, pen drives etc. as far as possible. However, if absolutely needed, scan it thoroughly using antivirus program before using.
- **PowerShell:** PowerShell in Windows devices exposes the command-line administrative console for making system altering changes. Attackers frequently use this console to compromise devices by means of automated scripts. Normal users typically never use PowerShell for any of their activities. Hence, it is recommended to disable PowerShell to make is harder for attackers to compromise Windows devices.
- **Remote Desktop:** Remote Desktop is a powerful feature which helps users access their devices from other devices by opening a virtual connection to their devices. It is especially useful when users have to access data stored on their devices when physically away from their devices. But lately this functionality is actively used by attackers to compromise devices and take control by means of weak passwords or vulnerabilities in RDP protocol. So, it is recommended to disable Remote Desktop on Windows machine at all times. In order to address the data portability requirements, users are advised to use cloud storages to make their data accessible anytime from anywhere.
- **Remote Support:** IT support teams rely heavily on free Remote Support tools like TeamViewer, Ammy Admin, Anydesk etc. to provide support to users on their end devices. These tools keep the agent running on user devices at all times. These tools are actively used to compromise and take control of the user device by means of weak passwords or vulnerability in these tools by the attackers. So, it is requested to avoid using them as far as possible. However, if absolutely necessary, then use it in run-mode only without installing it and terminate it after use. If it does not allow run-mode and has to be installed then uninstall it immediately after use.
- **Password Managers:** Passwords are a necessary evil in most of the IT systems today. Though multiple alternatives are being invented to remove the use of memorized passwords but they are still not pervasive and passwords are here with us for some more time. Most of our current password policy owes its allegiance to the guidelines for creating safe online passwords in NIST SP 800-63 released in 2003 by Bill Burr. Ironically, after making users suffer with passwords for 15 years, Bill has admitted that he was wrong. "Much of what I did I now regret", he says. Traditional password policies like long and complex passwords, mandatory password change, not allowing copy-paste passwords etc. actually reduces security around passwords. Multiple researches have shown that these policies force users to choose predictable passwords based on patterns and reuse them at multiple places in order to make it easier to memorize and reproduce. Once the password pattern is guessed by attackers, they can predict passwords with ease. Also, reusing passwords can be dangerous as compromise of one website / system will reveal passwords for many others. So, it is recommended to use zero-entropy password managers like masterpassword to have strong & unique passwords for each account. DO NOT re-use passwords for different accounts. DO NOT share passwords or other account details. Change password immediately if shared with someone or at the slightest hint of compromise.
- **Unlocked & Unattended:** Unlocked and unattended devices can be potentially dangerous especially in presence of a mole

in the premises. The attacker with the help of an insider can bypass traditional security checks and install malicious code on the device to compromise and take control. Also, compromised insiders can steal data through USB disks from unlocked and unattended devices. So, it is recommended to NOT leave your machines unlocked and unattended at any time.

- **Unknown Links & Files:** Users have to be very careful about the hyperlinks to click and files to download while browsing the Internet or emails. Attackers typically place malicious code within attractive hyperlink / file, taking about an impossible sale or opportunity. As soon as the users click on that link / file, the malicious code gets downloaded and executed on the user device thus compromising the device and taking its control. So, it is recommended to be very cautious before clicking on links or downloading files in unsolicited emails or attractive websites and avoid them completely as far as possible.
- **Official Email:** Free email services make users agree to a declaration that the data in your mail boxes can be accessed by them for various purposes. Some even go to the extent making users agree, inadvertently, to the declaration that the data in the mail boxes are public information and can be used for targeted advertising by multiple parties and shared with governments of host countries. Putting sensitive or critical official data on private email servers can lead to data loss / leak. The users sharing official data over non-gov email can be prosecuted for the loss / leak of data under various sections of the Indian Penal Code (IPC). So, it is mandatory for users to only use official email address (@gov.in, @nic.in) for official communications.
- **Data Backup:** Data has become one of the most essential assets for organizations and individuals alike. Unfortunately, it is also very fragile. Sometimes even slight mishandling or media holding the data can render it useless and users helpless. Infection of devices can also impact the availability of data as attackers can encrypt or delete it after taking control as in case of Ransomwares and Vipers. In order to increase the availability of data, it is recommended to maintain daily or weekly offline backup of critical data in external media like official portable hard disks or DVD drives. Connected backups in cloud storages have limited usefulness for recovery as attackers damage them along with data on devices.

Mitigation Principles

Once an endpoint is compromised, mitigation may seem like a futile exercise but it is not so. Depending upon how quickly the compromise is detected, mitigation will be able to salvage some of the data and prevent further damage. The following principles can help end users minimize loss and recover quickly,

- **Stop Use:** As soon as users become aware of a compromise or suspect a compromise of device, it is strongly recommended to stop use of the compromised / suspected device for all operations immediately till remediation is complete. This will ensure that the damage is contained till that point of time.
- **Disconnect:** Next step is to immediately physically disconnect all network connections to the compromised device(s) to stop the infection to spreading to other devices.
- **Change Passwords:** In order to limit access to compromise accounts for attackers, immediately change passwords of all accounts used on the infected devices from a known safe and clean device. It will ensure that the compromised accounts will no longer be misused by the attackers.
- **System Scan:** Once damage control of existing accounts is done, run a full system scan using the updated antivirus installed on the device. Preserve the device and all files on it for forensics to find the medium and impact of compromise. Unless the reasons for compromise are known, the device cannot be deemed fully secure.
- **Remediation:** Contact the experts to do a full forensic analysis of the suspected / compromised device to find out vulnerabilities used and the impact of the compromise. Also, demand recommendations to protect the device in future from such compromises. Users have to keep in mind that sometimes the compromises will happen even after following all best practices but it is not a reason to abandon them as it will increase the risk of compromise manifold.
- **Format Endpoint:** Once the experts have cleared the device after forensic examination, copy only extremely critical data from the compromised device to external storage and format it completely i.e. all partitions. Only complete format of the compromised device can ensure that the device is clean and ready to use. Install endpoint security agent as the first thing and update the operating system before installing any other software.
- **Restore Data:** Once the system is rebuilt and updated with latest patches for operating system and all other software, copy data from the external backup and the device is ready to use. Every compromise should remind the users of the risks of cyber space and motivate them to follow the basis cyber security hygiene with more rigor and conviction

Summary

This article tries to highlight the importance of endpoints as a new frontier in the cyber warfare, the importance of keeping the endpoint devices safe and make the users realize the significance of their cyber habits and hygiene as a crucial component in the full-blown cyber war. This article also tries to provide a set of best practices that users can follow without the use of fancy technology to prevent compromises to a large extent. It then tries to define some basic steps to follow in case of suspected compromise or actual compromise. The key takeaway is that prevention is better than cure and basic hygiene can save users from a great of pain and ignominy while navigating through the hostile cyber space.

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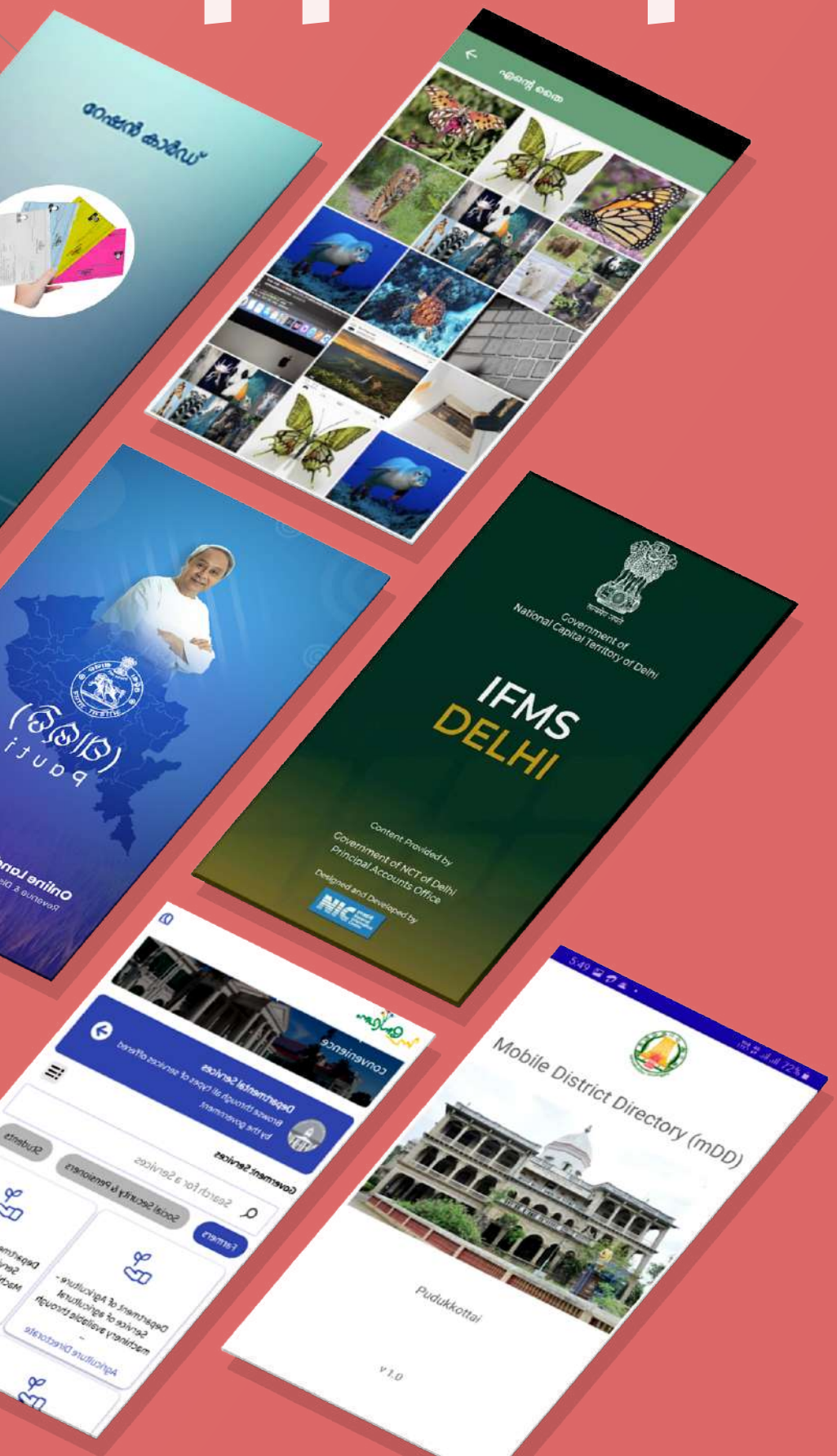
Read Previous Issues at
https://informatics.nic.in/

Appscape

Showcasing latest mobile apps developed by National Informatics Centre



Ente Thai (My Sapling)

The Kerala State Biodiversity Board has taken up many initiatives for afforestation in both Urban and Rural landscapes. Afforestation is a method of making those lands greener which has been abandoned and degraded agricultural lands or without forests for quite a time. On the occasion of World Environment Day celebrations on 5th of June 2021, the State Biodiversity Board has distributed saplings to common people through various NGO's.

The mobile App "Ente Thai" has been developed for monitoring plant growth with realtime updations and various snapshots. This mobile app will provide a quick survey of plant distribution and health status with reasonable time and effort. The details of the sapling with its common Name, Species name, Quantity and Real time photographs with location data is captured. Monthly growth updation of the saplings are uploaded by the users and monitored by the department. Gallery of the saplings with monthly statistics is available in the app.

It's an android application with location based services designed for collecting information on planted saplings. The mobile app provides server side components for uploading data and a web based interface for managing and analyzing data. The backend is developed on PHP with Slim framework and Database Management System is PostgresSQL. The access of the mobile app is restricted by the administrators through Mobile numbers.

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"PAUTI"

The "PAUTI", local Odia name of "Rent Receipt", is referred by Government Authorities for providing some services to the citizens. Thus, the importance of this document on the part of citizens is more. Many times, people staying away from Odisha were coming to Revenue Inspector (RI) offices to pay their Land Revenue in time. To meet this public requirement, a citizen-friendly web application "Online Land Revenue Payment"

has been implemented. This database of Tenant Ledger holds 1.73 crore records facilitating service to the citizens for paying their Land Revenue online from anywhere at any time.

Nowadays, since most of the citizens have a smartphone, Mobile App "PAUTI" was developed, so that the citizens can pay their Land Revenue using their Mobile phones. The citizen doesn't need to have a desktop / laptop nor to visit any cyber cafe for payment of land revenue. Further, if the user does not know his Khata (RoR) Number, the App has the facility to search the Record of Rights from Bhulekh. Using "PAUTI" App, The Landowners are easily paying their rent in time. On the other hand, the Electronic Tenant Ledger is also automatically updated facilitating generation of up to date registers. This service reduces the job of Revenue field functionaries to engage them in other activities.

As of now, No. of Khatiyans against which payment done is 9,69,629 and Total Amount Collected Rs 5,66,54,595. Total downloads of the MobileApp is 50,000+.

Dr. Pabitrananda Patnaik, Scientist-F (p.patnaik@nic.in)

IFMS Delhi

NIC, Delhi State Unit has developed IFMS Delhi Mobile Application in coordination with Principal Accounts Office, Government of NCT of Delhi and is catering to around 1 lakh employees of Delhi Government. The Mobile App has been integrated with the Integrated Financial Management System of Delhi Government which is being implemented by more than 1,700 DDO's and 25 Pay & Accounts offices of Delhi Government.

The main objective of this mobile application is to facilitate all employees of Govt. of NCT of Delhi to access their salary details & GPF statement / subscriptions.

IFMS Delhi mobile app has received the 'Bronze Award' in the State mobile app contest held by National Informatics Centre in October 2021. The App has the following features -

- Employee Registration
- Personal Information Details
- Salary Slips
- GPF Details and digitally signed Annual GPF Statement (monthly contribution, withdrawal, refund and interest calculation along with Download option)
- Form-16 Details
- NPS Details for employee who are eligible for New Pension Scheme.
- License Fee Details
- Change Password

The App facilitates ease of access through mobile, provides more value to the users and helps employees in getting salary based information. The app has more than 60,000 downloads so far.

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Crop Doctor

Indira Gandhi Krishi Vishwavidyalaya (IGKV) is the only University serving in the tribal and Naxal affected state, Chhattisgarh since 20th January 1987. The university has three mandates namely, teaching, research and extension. Under extension of services to farmers, the Crop Doctor Android mobile app had been envisaged to provide wider reach and easy accessibility of crop information and service among farmers.

It disseminates information related to disease, insect, nutrient deficiency of crops to the farmers.

- Farmers can query the information with imagse from various nutrient deficiency, diseases, insects affected for obtaining the solution as required
- It allows farmers to lodge grievances, monitor status and get the response

A key feature of the mobile apps is picture-based identification of insects, diseases and nutrient deficiency / Excess symptom. Farmers can upload a photo of their infected crop and the app will provide diagnosis. Farmers can also listen, as it reads the text. Currently, the database has over 1000 photographs, covering 25 crops in Chhattisgarh, and has prescriptions for over 100 crop diseases, insect and nutrient excess / deficiency symptoms. Every time a farmer uploads a photograph for diagnosis, it will be time marked and geo-referenced.

The Mobile App has more than 1,20,000 downloads so far.

The Development of this system for all crops is very important to provide farm specific advisory services in time and self-diagnosis of farm problems

YVS Rao, STD (yvsrao@nic.in), Prof Ravi R Saxena, Associate Director Research, Shri Abhijeet Kaushik, Scientist C (Abhijeet.k@nic.in)

VPMDP

For any District, the basic information such as Administrative setup, Population, Educational Institutions, Health Care Institutions, Agriculture details, Tourism, etc. are most sought by all. Though the details are collected and prepared by the Department of Statistics every year, it is difficult for anyone to access the details instantly.

"VPMDP' is a mobile app developed with the intention of helping any common man or department officials who needs a tool to refer immediately for getting basic details of Viluppuram district in Tamil Nadu. Being a mobile app based application, dissemination of details of a particular segment like Population, Agriculture, Education etc of Viluppuram District is very easy and user friendly by using TAB ICON design. The mobile app has been designed and developed by NIC Villupuram district centre with the guidance from Mobile Application Competence Centre, Chennai. The app has been developed as part of the DGMC Challenge 2021.

N.Gopinath, DIO (n.gopinath@nic.in)

Aarogya Seva

Arogya Seva Patient app is an initiative to bring health care service to the location and the way that suits patients. Tele-medicine application of e-Hospital suite aims to provide remote delivery of healthcare services and clinical information using telecommunications technology. This app is providing facilities to the Patient to consult with the Doctor by staying at his/her convenient and safe remote place. Electronic health records created during tele-consultation will be available to the Doctor for follow-up treatment of that patient.

The project has two separate Apps, one for the use of doctors and the other for the patients – Aarogya Seva Patient and Aarogya Seva Doctor. The features of Aarogya Seva-

- Patient Self-registration – The patient has to register in the app by giving the basic details after a mobile number verification through OTP.
- Appointment for Audio-Video Consultation – A teleconsultation appointment can be booked through the app.
- Confirmation of appointment by hospital and queue number allotment – When the confirmation of the appointment by the respective hospital is provided, it is received by the patient through the app.
- Video Consultation with a Doctor – The visual consultation can be done using the app using the VC module provided.
- ePrescription – Prescription by the doctor is available online
- SMS/Email Notifications – SMS and email notifications are managed by the APIs
- Configurable – Doctor Wise daily slots, consultation time limit, etc. are configurable parameters provided through the App.

Chayan Kanti Dhar, DDG and SIO (sio-trpr@nic.in), Nilkamal Dey Purkayastha (nilkamal.dp@nic.in)

Mobile District Directory (mDD)

Telephone directory is an important information service in our daily lives. In emergency, it is difficult to get the contact details of an officer in time. Moreover, it is a cumbersome task to maintain their present contact numbers and email ids, which are changed frequently. The district directory listing the mobile numbers (personal/ Official), landline numbers, WhatsApp numbers and email IDs of officials with search facility will be useful for all ,especially in emergency situation.

The mobile District Directory (mDD) solves the purpose for the district. One can search the details by filtering the department, designation and office using the search facility for quicker selection. This app also has the direct dialling facility to avoid the manual interaction of noting down the required number and type that number into the dialler. By clicking the selected number, it will directly copy the selected number into the dialler.

By clicking the whatsapp number, the app redirects to WhatsApp for chat with that number. Likewise, when the searched email address is clicked, this app redirects to the compose option of the email facility by automatically filling the 'From' and 'To' addresses. If more than one mail client applications are available on the phone, one can select the suitable email client for redirection to the respective mail client app to compose the mail.

The mobile District Directory (mDD) app has been developed on G2G & G2C basis and implemented in Pudukkottai district, Tamilnadu.

M. Tamilselvam, DIO (tselvam.m@nic.in)

mSevanam

mSevanam mobile application has been designed & developed by NIC Kerala for Kerala State Government. The objective of the application is to provide all online services offered by various government departments under a single umbrella. Using API integration technology, the mobile app provides all the citizen services incorporated in the portal, services.kerala.gov.in. At present, the mobile application provides 444 services from 58 departments under the Government of Kerala. In the current version available in Google Play Store, the citizen needs to authenticate in the respective department sites for availing services. It is proposed to integrate Jan Parichay authentication in the updateed version which will be released soon. This will facilitate a single sign-on facility using which the citizen can access all services without any multi user authentication for services from different departments. The features are -

- Citizens have access to all government services through the app from the comfort of their own without going to the government offices or Common Service Centres.
- Citizens can filter those services based on their category or the department.
- Citizens can access all the information including the document required for each service through the app.
- Frequently visited service Tab for Quick access to the services for the citizen.
- Dashboard link of all department service delivery status having Graphical representation with drill down features.
- Global search of any service with a search keyword.

The major stakeholders include

- Citizen
- Various Government Departments
- NIC
- Kerala State IT Mission
- CDIT Kerala

Mercy Sebastian, DIO (dio-koz@nic.in)

JAGRUTI

Jagruti, an Android mobile app, is perceived to evolve as an alert service app to District Administration in matters related to providing timely alerts on the Cases filed by petitioners in Court against District Administration / Line Department. This will enable the officers to prepare the response well in advance and improve the effectiveness of handling the court cases. The mobile app has been developed under the guidance of Additional District Collector, Mysuru. This has been designed and developed as part of the DGMC 2021 conducted by NIC. The app was launched by the District Collector, Mysuru.

This app is restricted to officials of departments who can register and use the services provided through the app. The major stakeholders of the app are, District Administration, Line Departments, Ecourts Division and National Informatics Centre. Technology Stack Used -

- Android Studio - Android Development Environment
- Flutter – Hybrid Framework used for development
- SQLite – A relational database management system which is used as local Database in the client
- MySQL - is a relational database management system used for the backend services.
- PHP – PHP scripting language was used for the API development.
- Python - high-level and general-purpose programming language
- Selenium - a portable framework for testing web applications.
- Dart - client-optimised programming language for apps on multiple platforms mainly used in the Flutter Framework.

R Sudarshan, PSA (karmys@nic.in)

Ente Ration Card

Ente Ration Card – an android mobile app – developed for Civil Supplies Department, Government of Kerala has been enhanced with 19 e-Services related to Ration Card Management System (RCMS). This enables citizens / cardholders to apply for online services, remit ration card fees and print the ration card using the mobile app. The services include Issue of New ration card, Addition of Member, Transfer of Card, Surrender of Card, etc. which citizens / card holders can avail through the App.

The salient features of the App includes-

- Cardholder can log into the mobile app using his ration card number. OTP sent to the mobile number registered in PDS database.
- e-Services which consist of 19 services related to Ration Card Management System
- For using e-Services , user-id and password credentials are mandatory
- Users of web application 'e-Services RCMS' can use the same credentials for logging into e-Services of Mobile App
- e-Services integrated with e-Payment of Treasury portal of Government of Kerala for remitting services fees
- Facility to upload the mandatory certificates required for each service and photo of card owner
- Print PVC / e-card
- View ration card details which includes card owner's family details
- View status of online application submitted by the card holder
- View details of ration purchased,
- Locate nearest FPS location etc.

The Ente Ration Card mobile App has so far more than 6.5 Lakhs downloads.

Ajith Brahmanandan, STD (ajithb@nic.in)

For NIC apps related query, please contact

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Visit the Mobile App Store at
https://egovmobileapps.nic.in

Hon'ble Prime Minister Inaugurated PSA Oxygen Plants at DHH Rayagada, Odisha through NIC Video Conferencing Service virtually

Hon'ble Prime Minister Shri Narendra Modi virtually inaugurated Pressure Swing Adsorption (PSA) Oxygen Plants established under the PM CARES fund at District HQ Hospital, Rayagada, Odisha along with 35 plants across India on Thursday, the 7th October 2021.

Shri Makaranda Muduli, Hon'ble MLA, Rayagada AC, Shri Saroj Kumar Mishra, District Collector, Rayagada and Shri Artabandhu Naik, CDMO, Rayagada, other officials and the public were present on the occasion.

The entire event was successfully held with the technical support of NIC. NIC, Rayagada provided technical support and guidance to connect the outdoor location Video Conference with the support of Odisha State VC Coordinator Shri Sanjay Kumar Das and NIC Delhi VC Division. Collector, Rayagada appreciated the support of Shri Guna Sekhar Nethi, DIO, Rayagada and NIC VC Division for making the event a success.

Hon'ble Prime Minister of India, Shri Narendra Modi Inaugurating PSA Oxygen Plant at DHH Rayagada, Odisha

- Hara Prasad Das, Odisha

E-launch of 20 Paddy Procurement Centres (eMandi) by Hon'ble Lt. Governor, Shri Manoj Sinha

To ensure the timely sale of paddy and remunerative prices to the farmers, Lt. Governor Shri Manoj Sinha, e-launched 20 Paddy Procurement Centres (Mandis) in Jammu, Samba, and Kathua districts.

First, the Government of J&K has started procuring wheat in addition to paddy. Speaking at the launch, the Lt. Governor said the amount of sale proceeds will be directly credited into the accounts of the farmers through DBT within 72 hours. He assured the farmers that the number of e-Mandis will be increased further in future, and reiterated the commitment of the Government to provide all possible assistance to the farmers to increase their income. 'Contrary to the rumours being spread by certain sections with vested interests, I assure the farmers that the number of these Mandis will be increased further in future'.

Hon'ble Lt. Governor, Shri Manoj Sinha launching 20 Paddy Procurement Centers (eMandi) in Jammu

He said the use of technology has enabled all these Mandis to get linked digitally with the procurement portal so that the Food Corporation of India can register the farmers on the portal and transfer money to their accounts through DBT within 72 hours.

- Jit Raj, Jammu and Kashmir

Hon'ble Chief Minister of Andhra Pradesh released reimbursement of Rs. 112.7 crore using NIC developed workflow-based application

Hon'ble CM of Andhra Pradesh released the reimbursement of Rs. 112.7 crores of interest subsidy into the bank accounts of 6.67 lakh farmers across the state, using NIC developed workflow-based web & mobile application.

Hon'ble Chief Minister of Andhra Pradesh released re-reimbursement of interest subsidy to farmers under 0% interest Crop Loan Scheme. These applications (https://karshak.ap.gov.in/ysrsvpr/) capture loans, crop details sowed in the field and help in the verification & validation of eligible farmers. The chief minister announced that the YSR Congress government would reimburse Rs 450 crore as electricity charges by giving a rebate in the power bills. "Our government provided a total of Rs 2,086 crore to MSMEs, lending a helping hand in the past 27 months," he said, and added that the YSRC government has paid dues of Rs 1,588 crore, pending from the term of the previous TD government, and we did so without showing any bias."

Hon'ble CM of Andhra Pradesh released the reimbursement of Rs. 112.7 crores of interest subsidy into the bank accounts of 6.67 lakh farmers across the state

- Dr. Venkata Ramana V V, Andhra Pradesh

Shri Bhupesh Baghel, Hon'ble Chief Minister, Chhattisgarh, released the publication titled - Leveraging Innovations in Agriculture

Shri Bhupesh Baghel, Hon'ble Chief Minister, Chhattisgarh, inaugurated the newly constructed KrishiVigyan Kendra building

Shri Bhupesh Baghel, Hon'ble Chief Minister, Chhattisgarh, inaugurated the newly constructed Krishi Vigyan Kendra building, Akti Biodiversity Museum, newly constructed Knowledge Centre building and recording studio, Phytosanitary laboratory located at Indira Gandhi Krishi Vishwavidyalaya (IGKV) campus on 8th October 2021.

On this occasion he released the IGKV eGovernance publication titled "Leveraging Innovations in Agriculture" compiled by scientists of Knowledge and Technology Resource Centre, IGKV and NIC, Chhattisgarh. It has covered various initiatives under Smart Kisan including Farmer's e-Club, e-Krishi-Panchang, Ask Expert, Knowledge bank, Crop Doctor, Custom Hiring, eHaat etc. Agriculture and Biotechnology Minister Shri Ravindra Choubey presided over the function. Shri Satyanarayan Sharma, MLA, Raipur Rural, Shri Pradeep Sharma Agriculture Advisor to Chief Minister, Dr. Kamalpreet Singh, IAS, Agriculture Production Commissioner, Dr. S.K. Patil, Vice Chancellor - IGKV, Dr. A. K. Hota, DDG & SIO, Shri Y.V. Rao, STD and Shri Abhijeet Kaushik, Scientist-C, NIC Chhattisgarh, were present on the occasion.

- Y. V. Shreenivas Rao, Chhattisgarh

Hon'ble Union Finance & Corporate Affairs Minister Smt. Nirmala Sitharaman Launched Assam Right to Public Services (ARTPS) Portal

Launch of the RTPS portal by Smt. Nirmala Sitharaman, Hon'ble Union Minister of Finance and Corporate Affairs

To further strengthen Hon'ble PM Shri Narendra Modi's call for Minimum Government, Maximum Governance, the Assam Right to Public Services Portal, www.rtps.assam.gov.in was launched by Hon'ble Union Minister of Finance & Corporate Affairs, Smt. Nirmala Sitharaman in the august presence of Hon'ble Chief Minister Dr. Himanta Biswa Sarma on the 7th of October, 2021 at the Srimanta Sankardev International Convention Centre, Guwahati.

The portal has been designed and developed by the National Informatics Centre, Assam, under the SERVICEPLUS Framework and facilitated by the World Bank Financed Assam Citizen-Centric Service Delivery Project (ACCSDP).

The Hon'ble Chief Minister of Assam, Dr. Himanta Biswa Sarma, lauded the efforts of the National Informatics Centre for making services available to the citizens through the RTPS portal. There are currently 47 services available through the ARTPS portal which will be extended to another 95 services.

The CM said the web portal would prove to be a boon in providing notified citizen-centric service delivery to the people.

- Kavita Barkakoty, Assam

"A Multi-Dimensional view of use of Technology in Government" presented at LBSNAA, Mussoorie for future leaders

Keynote address by Dr. Neeta Verma, DG, NIC to Officer Trainees of 96th Foundation Course at LBSNAA Mussoorie

DG NIC Dr. Neeta Verma presented "A broader picture of e-Governance, and the use of ICT in India, and NIC's role in it". Her session was followed by the DDG Shri R. S. Mani explaining "Some of the key features of the available e-Gov ICT Infrastructure and the security initiatives undertaken", DDG Shri Pawan Kumar Joshi talking on "The NextGen Digital Government", and the DDG Dr. Seema Khanna demonstrating "The Government's Messaging Services".

The audience of 488 Officer Trainees (OTs) of the All-India Civil Services and the Royal Bhutan Civil Services showed keen interest. Attending the ongoing 96th Foundation Course (FC), from 05 Dec 21 to 17 Mar 22, at the Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie, they asked intelligent questions and got answered by NIC officers.

- Arvind Dadhichi, Uttaranchal

Hon'ble Prime Minister Virtually Inaugurates 82nd All India Presiding Officers Conference at HP Vidhan Sabha through NIC Video Conferencing Service

Hon'ble Prime Minister of India, Virtually Inaugurating the 82nd All India Presiding Officers Conference

Shri Narendra Modi, Hon'ble Prime Minister of India, virtually inaugurated the 82nd All India Presiding Officers Conference and 58th Conference of Secretaries of Legislative Bodies in India, on 17th November 2021. These Conferences were organized at Himachal Pradesh Vidhan Sabha, Shimla from 16 to 19 November 2021 to commemorate the Centennial Year of the Conference as the first All India Presiding Officers Conference was held at Shimla in the year 1921.

Shri Om Birla, Hon'ble Speaker of Lok Sabha, Shri Jai Ram Thakur, Hon'ble Chief Minister, HP, Shri Harivanash, Hon'ble Deputy Chairman of Rajya Sabha, Shri Vipin Singh Parmar, Hon'ble Speaker of HP Vidhan Sabha, Presiding Officers of all the State Legislatures attended the inaugural function. The function was arranged in the historic Assembly Hall of HP Vidhan Sabha, Shimla. The Hon'ble Prime Minister addressed the dignitaries through NIC Video Conferencing.

The inauguration and Hon'ble PM's address was facilitated through NIC Video Conferencing and officers from NIC Headquarters, State Centre Shimla and HP Vidhan Sabha contributed in making the event successful.

- Ajay Singh Chahal, Himachal Pradesh

NIC Chhattisgarh presented on TelePractice during Jawaharlal Nehru National Education Conclave

Presentation by Shri A. K. Somasekhar, Sr. Technical Director, NIC, Chhattisgarh on Tele-Practice

The government of Chhattisgarh has organised Jawaharlal Nehru National Education Conclave during 14th & 15th Nov 2021, in which 27 states and 2 union territories participated. Hon'ble Chief Minister Shri Bhupesh Baghel released the document 'Vision 2030 for Education'. The conclave has been addressed by Nobel laureate Dr. Abhijeet Benarjee and eight-panel discussions have been chaired by different education experts.

The conclave included a presentation on 'TelePractice' from NIC, Chhattisgarh. Dr. A. K. Hota, DDG & SIO, and Shri A. K. Somasekhar, Sr. Technical Director, NIC, Chhattisgarh presented the platform. TelePractice is a technical platform to conduct oral quizzes or enable speaking practice by students, using the social media platform 'TELEGRAM' and back-end processing using 'Python'. The teacher creates a Telegram group and adds students to a particular class. At the scheduled time all the students participate in the quiz from their homes. The teacher puts a question image in the group, and students give answers as voice messages.

- Y. V. Shreenivas Rao, Chhattisgarh

Launch of NGDRS-Tripura Application by Hon'ble Union Minister of the Rural Development, Govt. of India through NIC Video Conferencing Service

Shri Giriraj Singh, Hon'ble Minister of Rural Development & Panchayeti Raj, Government of India launching NGDRS-Tripura

Launching of National Generic Document Registration System (NGDRS) in Sub Registry Offices (SRO) of West Tripura & Sepahijala Districts by Shri Giriraj Singh, Hon'ble Minister of Rural Development & Panchayeti Raj, Government of India, on 3rd December 2021 in presence of Shri Fagan Singh Kulaste, Hon'ble MOS, RD and Steel, Government of India.

Shri Biplab Kumar Deb, Hon'ble Chief Minister of Tripura, Shri Narendra Chandra Debbarma, Hon'ble Minister of Revenue & Forest of Tripura, Shri Kumar Alok, IAS, Chief Secretary of Tripura, Shri Hukum Singh Meena, Addl. Secretary, MoRD, DoLR, GOI, Smti. Tanusree Deb Barma, Secretary, Revenue Department, Tripura, Shri C. K. Dhar, DDG & SIO, NIC Tripura, Shri A. M. Joshi, Scientist-F, HOD NGDRS Pune and Shri Rajiv Goel, HOD NIC, DoLR, Delhi was also present in this inaugural function along with other officials and citizens from various SRO Offices and Districts of Tripura.

- Chaitali Bhattacharjee, Tripura

Hon'ble Chief Minister, Haryana Shri Manohar Lal launched 'Haryana Seed Portal developed by NIC Haryana

Hon'ble Chief Minister Haryana Shri Manohar Lal launching the Haryana Seed Portal (https://uttamseed.haryana.gov.in)

Hon'ble Chief Minister Haryana Shri Manohar Lal launched Haryana Seed Portal (https://uttamseed.haryana.gov.in) on 30th October 2021 in Chandigarh. This seed portal will provide transparency in the seed production programme arranged by the Government as well as Private Seed Producing Agencies and will ensure a better quality of certified seed.

This portal has been developed by NIC Haryana. Shri Alok Srivastava, Scientist-F, NIC Haryana briefed the salient features of the Seed portal to Hon'ble Chief Minister Haryana and esteemed guests. A farmer can apply for Seed Development Program and seeds would be issued to the farmers by seed producing agencies using this portal. All Producing agencies would come under the ambit of this portal. This portal has been integrated with Meri Fasal Mera Byora (MFMB) Portal. The issuance program has been linked with seed inventory so that the authorities can monitor the availability of seeds on a real-time basis for decision making. Later this portal will also be linked with the seed certification program for survey and testing.

- Deepak Sawant, Haryana

Hon'ble Union Minister of State Dr. Jitendra Singh, Inaugurated NIC's eOffice Product Suite at National Agri-Food Biotechnology Institute (NABI) and Centre of Innovative & Applied Bioprocessing (CIAB) at Mohali, Punjab

Hon'ble Minister, Dr. Jitendra Singh inaugurating the eOffice in CEL along with Shri Chetan Prakash Jain, CMD, CEL and other dignitaries

Hon'ble Union Minister of State (Independent Charge) Science & Technology and Earth Sciences; MoS PMO, PP/ DoPT, Atomic Energy & Space, inaugurated NIC's eOffice product suite at National Agri-Food Biotechnology Institute (NABI) and Center of Innovative & Applied Bioprocessing (CIAB) at Mohali, Punjab.

In a major step towards efficacious and transparent decision making and seamless electronic movement of organization files in National Agri-Food Biotechnology Institute (NABI) & CIAB, Dr. Jitendra Singh, Hon'ble Minister inaugurated eOffice facility on Tuesday 2nd November 2021. This is the key initiative taken by NABI and CIAB towards empowering digital institutional activities under the mission 'Digital India'

- Parminder Kaur, Punjab

Shri Ajay Prakash Sawhney, Secretary, Ministry of Electronics & Information Technology inaugurated 'Consultative Workshop on Technical and Regulatory Need Assessment of Cyber Security for the Government'

Shri Ajay Sawhney, Secretary, MeitY chairing the Workshop

A Consultative Workshop on "Technical and Regulatory Need Assessment of Cyber Security for the Government" was organized by National Informatics Centre Services Incorporated (NICSI). The workshop was chaired by Shri Ajay Sawhney, Secretary, Ministry of Electronics & Information Technology along with Smt. Jyoti Arora, Special Secretary (FA), Dr. Rajendra Kumar, Additional Secretary (Chairman NICSI), Dr. Neeta Verma, DG (NIC) and Shri Prashant Mittal, MD (NICSI).

The workshop was attended by the Chief Information Security Officers in Ministries and Departments of Government of India and other Government officials operating in the domain of Cyber Security.

- Informatics News Desk, NIC-HQ

Hon'ble Minister of Civil Aviation Shri Jyotiraditya M. Scindia Launched the beta version of HeliSewa Portal

Minister of Civil Aviation, Shri Jyotiraditya M. Scindia, launching the beta version of HeliSewa Portal

Shri Jyotiraditya M. Scindia, Hon'ble Minister of Civil Aviation, launched the beta version of HeliSewa Portal (helisewa.civilaviation.gov.in) in HeliCopter Summit 2021 held on 8th October 2021 at Dehradun. The main objective of the portal is to make available the online services to stakeholders like submission of online requests to the District Administration for seeking permissions for helicopter operations, creation of a directory for Helipads, and many more by the Ministry of Civil Aviation.

The HeliSewa portal was designed, developed, and hosted by NIC Civil Aviation Informatics Division. During the launch, an online request was submitted to District Magistrate (DM), Uttarkashi (Uttarakhand State) by an Air Operator through the Application. After receiving the request in a prescribed format in his official email account, the District Magistrate acknowledged the receipt and action taken report over Video Conferencing. He was connected to the Summit via VC. The Air Operator also acknowledged the response received from DM on his request. The Hon'ble Minister in his address appreciated the efforts and emphasized to make it more robust. The live demo was jointly presented by Smt. Usha Padhee, Joint Secretary, MoCA, and Shri Sanjay Kumar Rastogi, Senior Technical Director, NIC, Civil Aviation Division, MoCA.

- Civil Aviation Informatic, Dehradun

Inauguration of eDaakhil by Hon'ble Minister Shri Arun Upreti, Food & Civil Supplies Department, Government of Sikkim

Hon'ble Minister, Food and Civil Supplies Hon'ble IT Adviser, Secretary Food, SIO, and Additional SIO launching the eDaakhil Portal

Shri Arun Upreti, Hon'ble Minister for UDHD, Food and Civil Supplies and Consumer Affairs, Government of Sikkim launched the eDaakhil (Online filing of consumer cases) portal https://edaakhil.nic.in at NIC Sikkim State Unit on 7th October 2021. With this Sikkim has become the 22nd state in the country and 2nd State in North East to launch this portal.

The program started with presenting a bouquet to the Hon'ble Minister and other important delegates. The welcome address was given by Smt Tripti Hangma Subba, Deputy Secretary, Food and Civil Supplies department. A presentation on CONFONET and e-Daakhil was given by Dr. L. P. Sharma, Sr. TD & Addl. SIO, NIC Sikkim. It was followed by the address of Shri D. C. Mishra, DDG, NIC New Delhi. Shri D.C. Mishra DDG explained in detail the background of NIC and the role of NIC in the digital transformation of the country with flagship services that are available with NIC. Followed by that the portal was officially launched by the Hon'ble Minister.

- Sikkim State Centre, Gangtok

Launching of eDaakhil Portal in Goa by Hon'ble Minister Shri Govind Gaude for Civil Supplies and Consumer Affairs, Goa

Hon'ble Minister Shri Govind Gaude congratulated the NIC officers for their contribution and enlightened the benefits of eDaakhil.

Shri Govind Gaude, Hon'ble Minister for Civil Supplies and Consumer Affairs, Goa launched the eDaakhil (Online filing of consumer cases) portal at Minister's Chamber, Porvorim on 6th September 2021. https://edaakhil.nic.in.

Shri Siddhivinayak S. Naik, the Director, welcomed the gathering, and bouquets were presented to the dignitaries by Smt. Nilima Desai, Smt. Namrata Kavlekar, Smt. Sarita Morajkar, Smt. Shweta Thally, Smt. Bhakti Sawant, Smt. Shilpa Naik, Smt. Hemlata Parab. Shri G.Mahalingam explained the features of the eDaakhil software. eDaakhil facilitates the consumers and advocates to file the consumer cases through an online Portal and provide start to end workflow for consumer and department officials. It also facilitates respondents to file replies or rejoinder through online mode.

- Goa State Centre, Porvorim

e-launching of 'ULPIN' & 'SVAMITVA' in J&K by Hon'ble Union Minister for Panchayati Raj & Rural Development and Hon'ble Lt. Governor, J&K jointly

Hon'ble Union Minister for Panchayati Raj & Rural Development and Hon'ble Lt. Governor, J&K jointly launching 'ULPIN' & 'SVAMITVA' in J&K

Hon'ble Union Minister for Panchayati Raj & Rural Development and Hon'ble Lt. Governor, J&K jointly launched NIC developed Unique Land Parcel Identification Number (ULPIN) and Survey of Villages Abadi and Mapping with Improvised Technology in Village Areas (SVAMITVA), in the Union Territory of Jammu & Kashmir.

e-launching of Unique Land Parcel Identification Number (ULPIN) and Survey of Villages Abadi and Mapping with Improvised Technology in Village Areas (SVAMITVA) by the Union Minister for Panchayati Raj and Rural Development is with an aim to reach the rural population and have the related schemes based on technologies to have transparency as well as quick and convenient access to the landowners.

SVAMITVA e-scheme is all about the distribution of property cards with all legal sanctity to each household in every village in the country, and Jammu and Kashmir now poised for implementing the said scheme is commendable.

- Jit Raj, Jammu & Kashmir

Hon'ble Home Minister of Mizoram Shri Lalchamliana inaugurated Road Accident Database(iRAD) Project in Mizoram

Hon'ble Home Minister of Mizoram Shri Lalchamliana inaugurating Road Accident Database(iRAD) Project in Mizoram

Hon'ble Home Minister of Mizoram Shri Lalchamliana inaugurated Integrated Road Accident Database (iRAD) on 12th October 2021 at the official function organized by the Mizoram Police at DGP Conference Hall, Police Headquarters, Khatla, Aizawl. The inauguration program was chaired by Shri John Neihlaia, IPS, IGP (Hqrs) in the presence of selected officials from NIC Mizoram and iRAD Stakeholders such as the Police Department, Transport Department, PWD (Highways) Department, and Health Department.

The Home Minister on launching iRAD Project thanked the joint effort made by all the stakeholder departments for making this project rollout from 15th September 2021. This project, he believed, would particularly be very useful for Mizoram PWD in improving the road safety measures along the roads in Mizoram. In his inaugural speech, he had also highlighted some of the important projects that are currently operating under the Mizoram Police Department such as CCTNS (Crime and Criminal Tracking Networks & Systems) and 112 ERSS (Emergency Response Support System).

- Lalhmachhuani, Mizoram

Launch of 'eGazette Application for Printing Department' by Hon'ble Chief Minister of Kerala, Shri Pinarayi Vijayan

Hon'ble Chief Minister for Kerala, Shri Pinarayi Vijayan launching the eGazette Application for Printing Department, Government of Kerala

Shri Pinarayi Vijayan, Hon'ble Chief Minister of Kerala launched the eGazette Application for Printing Department, Government of Kerala on 2nd October 2021 in presence of Shri Raju Narayanaswamy IAS, Principal Secretary(Printing & Stationery), Shri Mohan Krishnan P V, DDG & SIO, Shri Jaya kumar G, SrTD, COMPOSE Team consists of Shri Manoj P A, Sr. TD, Smt. Beena Jayaprakash, TD, Director of Printing Department, Supt. of Government Press (SGP) and Officials from Government Secretariat. Gazette Number 38 was published as the first online Gazette which consists of notifications from different Departments and Citizens.

COMPOSE (Comprehensive Operations and Management of Presses Over Secure Environment) is an enterprise-wide total IT solution for the Department of Printing. COMPOSE software is designed and developed by NIC Kerala State Centre.

- Kerala State Centre, Thiruvananthapuram

The Governance Now's 'Leadership Award' presented to Dr. Neeta Verma, DG, NIC during the 4th Digital Transformation Summit & Awards 2021

Dr. Neeta Verma, DG, NIC was awarded the 'Leadership Award' at Governance Now's 4th Digital Transformation Summit & Awards 2021, for setting up the Technology platform 'MyGov', enabling people to connect with the Government digitally & contribute towards Good Governance.

Dr. Neeta Verma, DG, NIC also delivered a keynote address in the 4th Digital Transformation Summit & Awards 2021, organized by Governance Now.

In the event, Chhattisgarh State Electricity Regulatory Commission & NIC Chhattisgarh together received the Governance Now's Digital Transformation Award in Digital G2C Services category for the CSERC Petition E-filling portal.

NIC wins Skoch e-Governance Award at the 75th Skoch Summit 2021

Ceremony of the much popular Skoch e-Governance Award at the 75th Skoch Summit 2021 Awards was held virtually on 13th November 2021.

1. SKOCH e-Governance Gold Award for Bihar e-RTPS Services Delivery through ServicePlus Software Framework of NIC - Right to Public Services (RTPS) Act has been enacted in Bihar with the objective of providing public services to the citizens within the specified time in a convenient, transparent and accountable manner

2. SKOCH e-Governance Gold Award for Gujarat CM Dashboard in e-Governance category - CM Dashboard is designed and developed to support government processes for making them simple and transparent resulting the government more accurate and responsive.

3. SKOCH e-Governance Gold Award for Sujalam Suflam Jal Sanchay Abhiyan 3.0 (SSJSA) in Water category - SSJSA is developed for Narmada, Water Resources and Water Supply department. The scheme aims to deepen water bodies in the state to increase storage of rainwater to be used during times of scarcity.

4. SKOCH Silver Award is conferred to Stamps & Registration Department, Government of Uttar Pradesh the project "PRERNA" - 'PRERNA' is designed to reorient the Stamps and Registration Department, Government of Utter Pradesh towards 100% automation in the registration process and speedy delivery of registered document of the citizens.

5. SKOCH Silver Award is conferred to Integrated Application Scrutiny System (iASS) for Governance category - iASS is an extension of the services of Online Job Application System (OJAS) implemented at Gujarat Public Service Commission (GPSC)

6. Goa Excise Management System (GEMS) awarded "SKOCH Order of Merit" - Goa Excise Department is mainly concerned with production of liquor, monitoring and controlling the liquor movements across in Goa.

Hon'ble CM, Chhattisgarh rewarded Indira Gandhi Agricultural University (IGKV) and NIC for e-Haat App

The Hon'ble Chief Minister, Shri Bhupesh Baghel, at the Kisan Summit and Award Ceremony held at Raipur on 6th December 2021, felicitated Vice Chancellor Dr. S.S. Sengar, Dr. R. R. Saxena of IGKV and Scientist Shri Abhijeet Kaushik of NIC, Chhattisgarh with citations and prize money cheque for eHaat– most innovative mobile App, an online platform for direct marketing.

e-HAAT is the online Agri-Market where farmers can buy/ sell or advertise fruits, vegetables, agriculture produce or any agriculture machinery, Tools or Tractors etc. The major goal of this mobile app is to act as a catalyst by providing a web based marketing platform to the farmer's especially small, marginal, medium and landless to directly sell to the buyers. Now, farmers can sell their produce directly to end consumer i.e. customer or any other group buyers on e-HAAT.