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October 2023

Cyber Security Awareness Month

एनआईसी NIC

Editorial

In an era dominated by technology, the significance of cybersecurity transcends the boundaries of national security or mere technical hurdles. Recent incidences, especially the attack on the servers of the country's premier health care institution causing operational havoc have sounded a clarion call, underlining the urgent need for a comprehensive, organization-wide approach to cybersecurity.

Today, the scope of cybersecurity extends across all government organizations as digital initiatives become pervasive. The digital enterprise concept, widely discussed in the technology sector, influences government agencies as well. Further, digital governance has evolved from simple website consolidation and app development into a multifaceted journey, necessitating a more comprehensive approach.

While early successes like apps and website consolidation might have created a sense of security, today's challenges require a broader strategy. This approach involves new governance structures and a cultural shift across the entire organization, embracing a whole-of-enterprise approach to cybersecurity.

Initiating this approach involves education and awareness programs for all government employees, from top executives to frontline staff. Simultaneously, robust policies and governance structures should be established to provide clear guidance. Prioritizing cybersecurity investments is crucial, extending beyond technology to comprehensive training, threat intelligence utilization, and collaboration with cybersecurity experts. Recognizing the ever-evolving threat landscape, continuous adaptation is pivotal.

Embedding a cybersecurity culture throughout government organizations is paramount. This makes security an integral part of the organizational DNA, with each individual understanding its significance and taking personal responsibility for safeguarding digital assets.
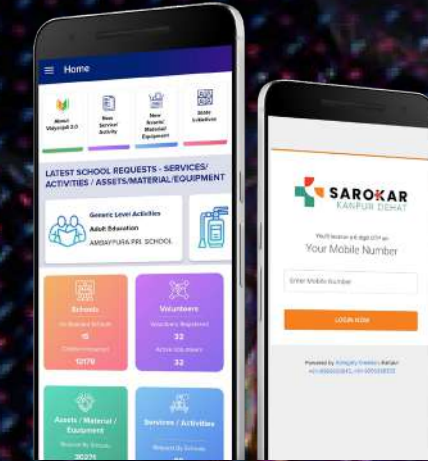
India's digital transformation journey faces challenges, but cybersecurity is now an organizational imperative, not just a technical concern. Recognizing this, the government must take proactive measures. The safety and success of India's digital governance efforts depend on protecting digital assets in the digital age. Cybersecurity is the linchpin holding India's digital governance future together, safeguarding the nation from evolving threats.

As we observe Cyber Security Month, let's remember that it's not just about data protection but safeguarding our nation's progress. Let's commit to education, clear policies, wise investments, collaboration, and constant adaptation in this digital transformation era. Together, we can build safer digital India.

Wishing you a great time ahead.

Editor-In-Chief

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Secretary MeitY visits NIC HQ

T he maiden visit of Shri S. Krishnan, IAS, to NIC Headquarters on September 22, 2023, subsequent to assuming his position as the new Secretary to the Ministry of Electronics & Information Technology (MeitY), marked a significant event in the annals of NIC.

On this occasion, the Secretary presided over a conference centered on NIC's Next-Gen Digital Government Solutions. The inaugural session commenced with a comprehensive presentation by Shri Rajesh Gera, Director General of NIC, who elucidated NIC's vision and strategic initiatives aimed at facilitating various eGovernance endeavors for the government. Smt. Alka Mishra further expounded upon the intricacies of these solutions.

Distinguished NIC State Officials, representing their respective regions, participated in the conference via video conferencing. They provided a comprehensive overview of prominent State eGovernance projects undertaken by NIC, all dedicated to the enhancement of citizens' quality of life.

Following these presentations, the Secretary lauded NIC for its pivotal role in ensuring the efficient last-mile delivery of government services. He underscored the imperative nature of recognizing NIC's often unrecognized contribution to quietly and effectively building the digital infrastructure of our nation. He remarked, "The diligent efforts of NIC have paved the way for us to expeditiously launch eServices that confer immense benefits upon our citizenry."

The Secretary's visit served as an enriching experience for NIC officials, instilling in them renewed motivation to continue to excel in their roles and uphold their commitment to public service.

▲ Shri S. Krishnan, IAS, Secretary, MeitY being received by DG, NIC

Ministry of Electronics & IT
Government of India

S. Krishnan, IAS
Secretary

It is with great pleasure and a profound sense of responsibility that I address you as the newly appointed Secretary to the Ministry of Electronics and Information Technology, Government of India. As we embark on this journey together, I wish to convey my heartfelt gratitude for your unwavering support and dedication to the cause of digital transformation in our nation.

In recent years, India has emerged as a shining beacon on the global stage, thanks in no small part to your tireless efforts. We have aptly executed numerous eGovernance initiatives, which have not only enriched the lives of our fellow citizens but have also garnered international acclaim. Many countries now view us as a pioneering example of harnessing technology for effective governance.

In today's context, digital infrastructure stands as an indispensable cornerstone of our society, rivalling the significance of traditional infrastructures like power, water, and transportation. With nearly half a billion internet users and a burgeoning landscape of homegrown digital services, India stands at the threshold of an extraordinary journey towards digital economic transformation.

Amidst this transformation, inclusivity remains a core principle as we aspire to cultivate a culture that extends equal opportunities to every citizen. Initiatives such as MyGov, UPI, Digital Locker, MeghRaj, and SWAYAM have been instrumental in this process. They have streamlined government services and elevated the overall quality of life. Furthermore, as we prepare for the forthcoming phase of Digital India, it is paramount that we prioritise world-class digital infrastructure, robust cybersecurity measures, emerging technologies, and the safeguarding of data.

As we embark on this collective journey, I am very confident that, with your continued support, dedicated commitment, and collective effort, we will continue our position as a global leader in the digital era.

I extend my sincere appreciation for your steadfast dedication to the vision of a digital, inclusive, and prosperous India.

Warm Regards
S. Krishnan

Madhya Pradesh
Towards a Transparent and Responsive eGovernance

Edited by **KAVITA BARKAKOTY**

NIC Madhya Pradesh, situated in the culturally rich and historically significant state often referred to as the "Heart of India," has embarked on a groundbreaking mission. Leveraging innovative IT initiatives, the State Centre is dedicated to enhancing transparency, efficiency, and citizen-centric services. In a state adorned with UNESCO heritage sites, mighty forts, and lush forests, the State Centre's efforts underscore a resolute commitment to providing its citizens with a transparent and responsive administrative framework, while promoting the unique treasures of the region.

ICT Initiatives in the State

NIC Madhya Pradesh has undertaken various ICT Projects for promoting good governance in the state. Some of the major projects are profiled below:

eMARG
https://emarg.gov.in

eMARG is an end-to-end e-Government solution for maintaining Rural Roads built under

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NIC Madhya Pradesh plays a pivotal role in advancing e-Governance, ensuring efficient public service delivery and transparency. With a focus on digital empowerment, it has implemented award-winning solutions like eMARG, Farm-Gate and Geo-Reach, earning accolades for their transformative impact. NIC MP continues to lead in technological innovation, providing its citizens with a transparent and responsive administrative framework, while promoting the unique treasures of the region.

the Pradhan Mantri Gram Sadak Yojana (PMGSY) by the National Rural Infrastructure Development Agency (NRIDA), GoI. This transparent and standardised system efficiently manages and monitors maintenance across over 3 lakh kilometres of Rural Roads in 30 States / Union Territories, benefiting government officials, civil contractors, quality control authorities, banks, and citizens.

Features

- Effective implementation of PBMC-based maintenance of Rural Roads
- Efficient and evidence-based monitoring of maintenance works
- Ease of doing business has improved efficiency of all stakeholders thus improved quality of road
- Digital empowerment of the contractors, e-payment of over ₹ 2000 crore

GeoReach
https://gismp.nic.in/georeach

Geomatics based Rural Roads Enterprise Application for Connecting Habitations (GeoReach) is an enterprise e-Government solution designed to streamline the construction of Rural Roads under the MP Rural Connectivity Project. Funded by the World Bank and AIIB, it encompasses rigorous quality checks, efficient billing procedures, and comprehensive project management, addressing technical and financial aspects. Implemented for 87 Project Implementation Unit (PIUs) of 52 districts of MP, this system assists the MPRRDA, World Bank, civil contractors, banks, SQM, and citizens.

Features

- Digitized Bill of Quantities (BoQ) and payments through PFMS
- Effective and efficient monitoring and evaluation system alongside fast claim disbursement
- Improved quality, performance and transparency for implementation of the scheme

Access Permission Management System (APMS)

This G2C application grants rule-based access permissions for land use along State Highways/MDR Roads under MPRDC jurisdiction. Permissions cover infrastructure projects like Retail Outlets, Petrol Pumps, Cable Laying, Pipelines, Drainage, Over Bridges, Canals, Hoardings, and Gates, among others.

Features

- Online application submission and tracking
- Collected approximately ₹ 27 Crore in fees through PayGov payment gateway from 2300 applications

- Simplified the business process for both applicants and departmental officials

- Improved standardization and transparency in government procedures

Jan Akansha

https://janakansha.mp.nic.in

Jan Akansha is a comprehensive platform for government departments, consolidating various functions into one interface. It encompasses features such as news feedback, Jan Shivir management, officers' diaries, tour details, court case monitoring, team management, VVIP letter tracking, notice boards, address books, user activity monitoring, and time limit work tracking. Accessible as a Progressive Web App (PWA) on all device ranges, it is readily replicable.

Features

- Implemented in 60 offices with 5500 users

- Effectively monitors time-limit papers

- Offers online application tracking

- Makes public redressal systems transparent

- Recommended by the GAD for implementation in government offices

Ayushman Bharat Niramayam (ABN)

https://niramayamp.nic.in

ABN under the PM Jan Arogya Yojana provides free medical treatment up to ₹ 5 Lakh in empanelled Hospitals for low-income earners. The portal identifies eligible beneficiaries by integrating data from SECC (Socio-economic Caste Census), NFSA (National Food Security Act), BOCW (Building and Other Construction Workers) Board, Sambal Scheme (Labour department) of the State and NHA dataset.

Features

- Citizen-centric application enabling more than 10 Crore beneficiary status searches

- Identification of 3.5 Crore eligible beneficiaries, ensuring timely medical interventions and reports enable monitoring at the grassroots level

- Leading the state in ABM Cards generation

eOffice MMP

Office Automation suite, a part of the AtmaNirbhar MP initiative, empowers digital transformation in the G2G and G2E domains with modules like eFile, Knowledge Management System (KMS), eTour, and e-Leave. It operates across 54 Mantralaya Departments, 99 Departments, 3 Divisions, 22 Districts, and 65 Tehsils, with over 40,000 users onboarded. It eliminates document mishandling, automates routine processes, and encourages paperless offices, fostering transparency.

SPARROW

This workflow-based system handles Annual Performance Appraisal Reports (APARs) and Immovable Property Returns, maintaining comprehensive employee appraisal records with alerts, dashboards, and status checks. It ensures data security and integrity through audit trails and electronic/digital signatures.

As of now, 23,500 users from 38 State Services have boarded the system.

PM Poshan

https://pmposhan.mp.gov.in/

MP PM Poshan Portal facilitates the rule-based execution of the PM Poshan Shakti Nirman Scheme, providing cooked meals to approximately 6 lakh students in Government and Aided schools and madrasas. This is achieved through process

NIC has played a pivotal role in implementation of e-Office Mission Mode Project across all the levels of government functioning in the state which includes 54 Departments, 99 HoD offices, 3 Divisions, 22 Districts and 65 Tehsil-level offices. This office automation product suite has significantly impacted the government machinery by bringing in transparency, accountability and efficiency in processes. Central Registry Unit (CRU) at Mantralaya, has streamlined the receiving, registering, distribution and tracking of DAAK meant for various departments. Rollout of SPARROW has been an important breakthrough towards digitalization of core administrative processes and led to drastic reduction in delays. Madhya Pradesh ranks second in terms of number of onboarded SPARROW services.

I appreciate and congratulate NIC team for its sincere and sustained efforts towards effective implementation and handling change management. Project has been included under the IT pillar of AtmaNirbhar MP initiative and has a strong potential to lead MP towards the path of Digital Empowerment in G2G and G2E domain.
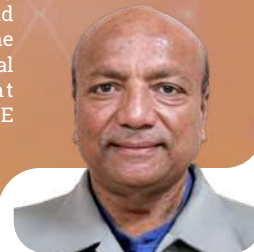
Vinod Kumar
Additional Chief Secretary
General Administration Department
Government of Madhya Pradesh
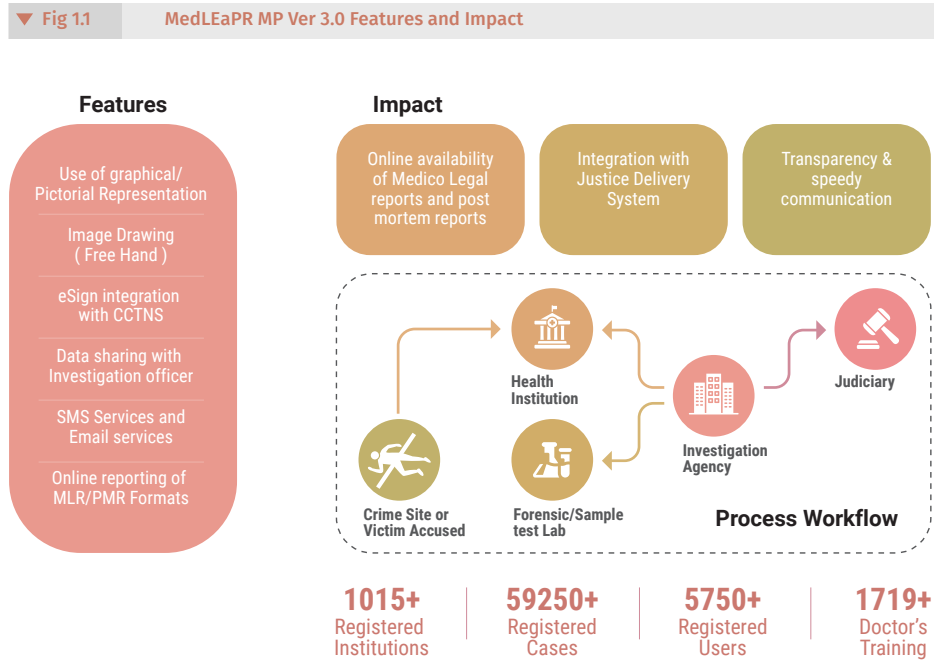
automations, integrated centralized food grain allotment, e-Payment for cooking costs and honorarium. Mobile app-based inspections ensure timely and transparent evaluation of mid-day meals.

Features

- Efficient management with a component-driven design and dashboards for major KPIs

- Seamless integration with existing systems like the State Education Portal, PFMS, and AePDS.

- Improved student enrollment, retention, and attendance

- Enhanced logistical planning for food-grain delivery, resulting in more nutritional meals

MedLEaPR MP Ver 3.0

https://medleapr.mp.gov.in/

This is a web-based reporting system designed to capture Medico Legal Reports and Post Mortem Reports. This system addresses

▼ Fig 1.1   MedLEaPR MP Ver 3.0 Features and Impact

Features
- Use of graphical/ Pictorial Representation
- Image Drawing (Free Hand)
- eSign integration with CCTNS
- Data sharing with Investigation officer
- SMS Services and Email services
- Online reporting of MLR/PMR Formats

Impact
- Online availability of Medico Legal reports and post mortem reports
- Integration with Justice Delivery System
- Transparency & speedy communication

Health Institution — Judiciary — Investigation Agency — Forensic/Sample test Lab — Crime Site or Victim Accused

Process Workflow

| 1015+ Registered Institutions | 59250+ Registered Cases | 5750+ Registered Users | 1719+ Doctor's Training |

NIC Madhya Pradesh is playing a vital role as a trusted ICT provider in the State. Their initiatives have helped the State improve the quality of service delivery and promote the IT ecosystem. I want to acknowledge the contribution of NIC in key e-Gov initiatives such as e-Uparjan, e-Mandi, e-Transport, e-Marg, e-Abkari, and e-Office, to name a few.

I am sure that NIC will continue to provide e-Gov solutions to improve efficiency in the delivery of citizen services. I wish the entire team the best in their future efforts.

Nikunj Kumar Srivastava

Principal Secretary
Department of Science and Technology
Government of Madhya Pradesh

the challenge faced by courts, prosecution, and defense in deciphering illegible handwritten reports during trials, aiming to streamline and improve the process.

Features

● Provides online access to electronically signed Medico-legal reports and Post Mortem reports
● Integrates with the Justice Delivery System, enabling faster reference
● Enhances transparency, facilitates speedy communication, and digitizes the reporting and processing procedures

Koushalam
https://mpskills.gov.in

Koushalam offers a comprehensive solution for managing Industrial Training Institutions and skill development training under various government schemes. It covers ITI management, teaching-learning platforms, trainee registration, and MIS for inspections, civil works, employee and teacher daily diaries, as well as asset management and mobile app-based attendance.

Features

● 1682 ITIs in are registered on the portal
● A total of 520,995 tools are registered, each with QR code details
● Jal Jeevan Mission (Pradhan Mantri Kaushal Vikas Yojana) facilitates the registration, assessment, and certification of approximately 172 trainers, 37,787 trainees, and 451 campuses

Panchayat Darpan

Panchayat Darpan is an integrated platform developed for PRI to manage their human resource. It also oversees development and construction works of Gram Panchayats, content management, administrative sanctions, salary / payroll, e-payment, financial records, profiles, meetings, revenue assessment, and tax billing.

Features

● Generates an average of 19,000 e-POS in a month
● Enables efficient and transparent operations for PRIs and stakeholders via a mobile app
● Integrated with banks and provides a progress monitoring dashboard for UPI-enabled Panchayats and integration with the Sandesh app

Social Security Pension Portal
https://socailsecurity.mp.gov.in

The Social Security Pension portal is a unified platform, along with the m-Pension Mitra Mobile App, for managing 12 social security pensions/ assistance schemes of the Government of Madhya Pradesh. It enables online applications, sanctioning, and payment disbursements, serving approximately 56 lakh beneficiaries with a monthly disbursement of around ₹ 340 Crore through a single ePO. Aadhaar eKYC is used for beneficiary verification, and it integrates with PFMS for three Government of India schemes.

Features

● Beneficiary information is publicly accessible
● Provides online digital pension passbooks for beneficiaries
● One-click facility for pension disbursement
● Enhances fund utilization and payment monitoring, facilitating reviews of payments

Shram Seva Portal
https://labour.mp.gov.in

Shram Seva Portal automates and streamlines all activities and core processes of the Labor department. It facilitates online rule-based approval for benefits of 19 welfare schemes, with registration currently done through e-KYC.

Highlights

● Service delivery within an average of 1 day

▼ Fig 1.2 : PM Poshan

through 753 providers
● Houses a digital repository of 17.15 lakh registered workers and 79.59 lakh family members
● Collects CESS amounting to over ₹ 250 Crore through the payment gateway annually
● Facilitates e-Payments of approximately ₹ 600 Crore to 6.5 lakh beneficiaries

Scholarship Portal
https://scholarshipportal.mp.nic.in

The Scholarship Portal serves as a platform for various scholarship and financial assistance programs, including Gaon ki Beti, Pratibha Kiran, Mukhya Mantri Jan Kalyan Yojana, Mukhya Mantri Maidhavi Vidhyarthi Yojana, Awas Sahayata Yojana, Foreign Study (Application Registration), and Post Matric Scholarships (Renewal) offered by different departments, with assistance provided through the m-Scholarship Mitra mobile app.

● Application tracking for students / institutions
● Hosts 35 lakh applications with required scanned documents
● eKYC compliant and integrated with NSP portal

Swachh MP Portal
https://www.swachh.mp.gov.in/

The Swachh MP Portal is a role-based system designed for automating, managing, and monitoring the implementation of Phase-II of the Swachh Bharat Mission (Grameen). It allows for online activity submissions, and Swachha Grahis can report from the field using the ODF Plus Mobile App, aiding in incentive calculations. The portal covers planning, progress tracking, and the implementation of SLWM projects and activities.

MP Vivah Portal
https://mpvivahportal.nic.in

The Vivah portal operates under the Mukhyamantri Kanyadan/Nikah Yojana and Kalyani Vivah Yojana, offering financial assistance for group marriages. It facilitates online scheduling, publication of group marriages, registration, document submission, verification, and application approval.

Features

- Mobile app for online attendance registration.
- e-Sign for the sanctioning of Kalyani Vivah Applications
- Approved beneficiaries for Vivah/Nikah Yojana: 66,000 couples, approximately ₹ 364 crore

Ration Mitra
https://rationmitra.nic.in

Ration Mitra manages PDS beneficiaries and activities, including FPS allotment, FPS and Welfare Institution management, and FPS inspection. It integrates with central repositories, AePDS, Ayushman Bharat Mission, and Samagra portal. Data from 1.26 crore ration cards and 5.32 crore beneficiaries across 27,377 Fair Price Shops are available, with 99.8% of the data Aadhaar-seeded. The mobile app, m-Ration Mitra, assists beneficiaries.

▲ **Fig 1.3 : m-Ration Mitra App**

MP eUparjan
https://mpeuparjan.nic.in

MP eUparjan is a farmer-centric e-Government ecosystem that computerizes the entire chain, from farmer registration to procurement centres, grain procurement, quality acceptance, transportation, and storage warehouses. It ensures Minimum Support Price (MSP) for registered farmers with integrated databases of land records and girdawari. Payments are made through JIT ePayments, integrated with PFMS, SLIA, and Aadhaar. With over 29 lakh farmers registered and 132 lakh metric tonnes of procurement, it has infused payments exceeding ₹ 33,108 Crore into the rural economy, enhancing food security. Serving farmers since 2012 for Kharif, Rabi, and Zaid season crops, it has established MP as a leading agricultural state.

MP eDistrict
https://mpedistrict.gov.in

The MP eDistrict portal ensures prompt delivery of services to citizens, as mandated by the Lok Seva Guarantee Act 2010. It offers time-bound services, including Certificates, Licenses, Permits, Social Welfare, and more. The portal emphasizes transparency, efficiency, and administrative accountability. Its key features include:

- Generates Digitally Signed Certificates
- Integration with Digilocker and WhatsApp for added convenience
- Provides access to 342 services from 29 different government departments
- Provides 62 services available under the Samadhan One Day Scheme
- Offers an extensive network of over 1.5 lakh delivery channels
- Facilitates over 50,000 applications for various services

Civil Supply Monitoring System (CSMS)
https://csmsmpscsc.mp.gov.in

CSMS manages food grain supply in the state, optimizing transportation by rail or road for PDS and FCI, with dynamic godown allocation for cost-effective storage. It includes paddy milling for CMR and Fortified Rice, payments to millers, fund management, and disbursal for various schemes, along with FCI billing. The system ensures quality testing and inspection of stored commodities in godowns, with payments totaling around ₹ 1,500 Crore for storage, labor, commission and transportation. It also ensures an adequate supply of gunny bags during procurement.

CM Dashboard

CM Dashboard offers comprehensive statistics and interactive reports for essential projects and schemes, including CM Relief Fund, CM Ghoshna, CM Monitoring, CM File movement, CM Visit, Letter to GOI, and Presentation to CM. It features complete workflow automation and encompasses all 56 administrative departments and 52 districts.

Stats

- Cases Registered: 139,801
- CM Relief Fund Applications Registered: 197,933
- CM Meetings Registered: 746
- Presentations given to HCM: 343
- Letters sent to GOI: 589

e-Uttar

e-Uttar is a streamlined G2G application designed for efficient compilation and submission of digitally signed replies to the State Assembly from the State Secretariat. It includes all administrative departments, their directorates, and state field offices. This process is smooth, error-free, and limits manual intervention. Its key features are:

- Online access to approved questions
- E-Repository for questions and replies
- Reduced paper usage, human effort, and manual intervention
- Enhanced transparency, integrity, security, and authenticity

Govt. of MP is committed to citizen service delivery in a time-bound, transparent, and convenient manner to its citizens; M.P is the first state to enact the Public Service Guarantee Act in 2010, ensuring timely delivery with a framework for appeals for citizens and a penalty clause to penalize the public servants for dereliction in their duties.

It's incredible to see the NIC MP's in-house software solution embedded with the provisions and rules of PSGA Act'2010 for Lok Sewa (https://mpedistrict.gov.in) consistently raising the bar since its inception in year 2013 with the addition of more and more citizen services.

I am happy that the efforts of NIC have resulted in impressive outcomes with the sustained online delivery of 9.78+ crore applications belonging to 342 services in 29 departments. I congratulate the NIC team for their efforts and consistent support in building such a platform, which is building ease and comfort for thousands of lives daily across the state.
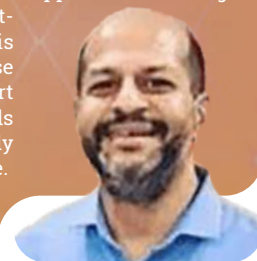
Manish Rastogi, IAS
Principal Secretary
HCM, DPSM
Government of Madhya Pradesh

eMandi and eANUGYA
https://eanugya.mp.gov.in

Integrated eMANDI and eANUGYA are utilized by all 259 Agricultural Produce Market Committees (APMCs). These platforms capture trader, hammal, and tulawati registration within the Mandi Yard. In the APMC Yard, farmers/sellers can auction their crops openly. After gate entry, auction, weighment, and payment, eANUGYA generates a No Objection Certificate (NOC) for crop movement outside the state or in secondary trade. It also maintains trader stock records and accounts for Mandi Cess. The M.P Farm Gate App integrates with online trading platforms and includes an exports module for exporter subsidies, extending procurement to farmers' doorsteps.

MP State Cooperative Portal
https://www.mp.nic.in/ecooperatives

The MP State Cooperative Portal adheres to the MP Co-operative Societies Act, streamlining workflow processes such as society registration, legacy data maintenance of cooperative societies, departmental auditor allocation based on PRORATA, CA empanelment, service records

for over 2000 employees, a judicial system for tribunals, and monitoring of housing, complaints, RTI applications, and audit notes/levies. This system has been replicated in the state of Goa.

Common Election Management System (CEMS)

CEMS is an online application for managing election personnel at the state, district, and office level, categorized by hierarchy. Its offline version assists District Election Officers in randomizing polling and counting parties. It also manages manpower for training, randomization, and party formation according to Election Commission guidelines.

Features

- Individual mobile app for personnel to review and edit their records
- State / District-level initialization and standard master tables for national-level consistency
- Multilingual support in the application menu

eGranthalaya

eGranthalaya is a cloud-based platform offering online access to catalogs, e-books, and research documents. It provides cross-library access to over 300 libraries and serves more than 1 lakh users from colleges and universities in the state. The platform offers access to a vast collection of 45,39,308 books.

eVidhanSabha

https://evidhan.mp.gov.in

e-Vidhan Sabha is a web-based solution connecting the MP State Legislature and the State Executive. MLAs submit digitally signed notices online, with notifications through NICemail, SMS, and SANDES alerts. This system has been replicated in Chhattisgarh state.

It boasts impressive achievements, including successfully completing 47 sessions with over 1.5 lakh questions/notices registered. It also ensures the receipt of 100% digitally signed answers from departments and maintains an archival data repository of over 10 years with immense value.

Transport Projects

Vahan / Sarathi: Since April 2021, Vahan /Sarathi has been successfully rolled out in 51 districts, offering services in both faceless and non-faceless modes. Approximately 30 lakh Learning / Driving License and Sarathi-related services have been offered, with around 21,000 permits issued.

Revenue collection from these services has reached ₹ 174.13 Crore. There have been around 13,77,349 new vehicle registrations done through these twin systems.

eChallan: This comprehensive solution for Transport Enforcement Officers and Traffic Police was implemented in the state in May 2022, with over 1 lakh challans issued and a collection of over ₹ 4.21 Crore in traffic fines.

iRAD (Integrated Road Accident Database): Funded by the World Bank, this initiative aims to address road accidents scientifically using modern ICT tools. Implemented in all 52 districts, MP leads in data capture to combat this menace.

eAabgari

https://eaabkari.mp.gov.in

eAabgari is a workflow-based solution that transforms the state excise ecosystem. It includes supply chain management, barcodes on permits / passes, QR code-based hologram labels on packages, status and notification alerts, GPS mapping of establishments, business analytics, a mobile app for crime reporting, and asynchronous data capture at retail outlets, enhancing ease of doing business.

MP Tender Portal for eProcurement

https://mptenders.gov.in

This portal enables the state government to manage procurement online, including tender notices for goods, works, and services, receiving and evaluating bids and proposals. It enhances efficiency, transparency, and accessibility for suppliers, reduces administrative burdens, increases competition, and ensures better value for money and sustainable outcomes. Additionally, it reduces tender process cycle times and offers easy monitoring through MIS reports and dashboards.

eHospital

https://ehospital.gov.in

e-Hospital is a versatile software that encompasses key hospital functions, including patient care, lab services, workflow-based document exchange, HR, online OPD appointment through ORS, and medical records management. It offers features like online lab reports, blood availability, and Scan and Share facility. The NextGen e-Hospital features a microservices-based architecture, with the NIC MP Team developing OPD and Laundry Modules.

IVFRT

This system provides a secure and integrated service framework for eVisa, Foreigner Registration, C-Forms & S-Forms filing, etc., enhancing legitimate travellers' experiences and strengthening security at Indore Airport, 52 State Foreigner Registration Offices, and Home Department. It streamlines immigration with automated passenger profiling and ensures traveller identity authentication at all touch points for better tracking.
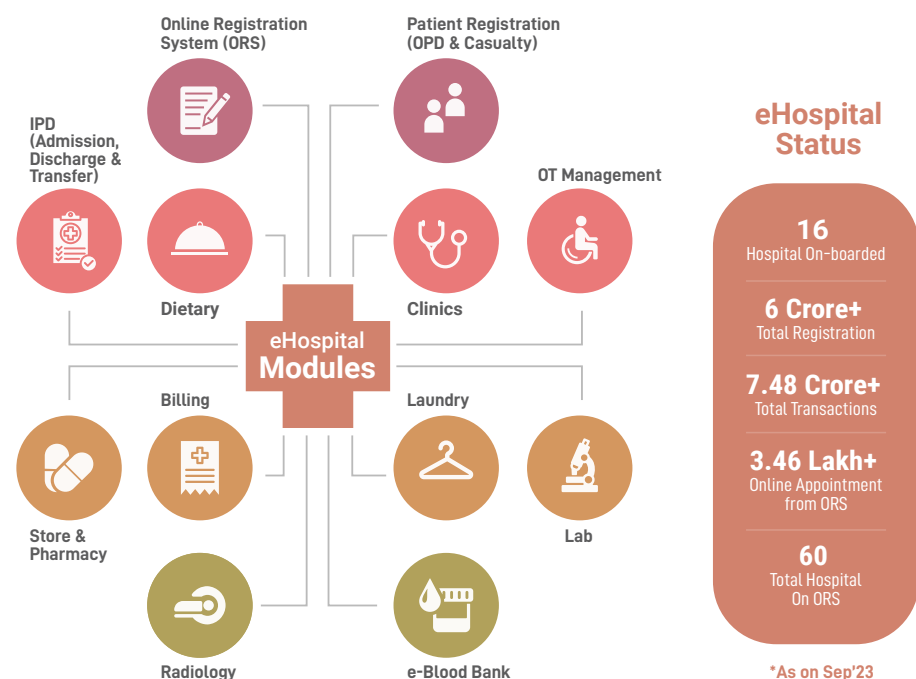
ICJS

https://icjs.gov.in

ICJS delivers speedy justice by digitizing, interlinking, and exchanging data among various justice pillars such as Police, Court, Prison, Prosecution, Forensic, etc. It is currently operational in state offices, enhancing the justice system's efficiency.

ePrisons

https://eprisons.nic.in

This cloud-based initiative manages prisons and prisoners, offering real-time inmate information to courts, prison officials, and entities in the Criminal Justice System. It facilitates online visit requests and grievance redressal, with

▼ Fig 1.4   eHospital Modules & Status

eHospital Modules

- Online Registration System (ORS)
- Patient Registration (OPD & Casualty)
- IPD (Admission, Discharge & Transfer)
- Dietary
- OT Management
- Clinics
- Billing
- Laundry
- Store & Pharmacy
- Lab
- Radiology
- e-Blood Bank

eHospital Status

16 Hospital On-boarded

6 Crore+ Total Registration

7.48 Crore+ Total Transactions

3.46 Lakh+ Online Appointment from ORS

60 Total Hospital On ORS

*As on Sep'23

129 jails onboarded. It also provides VC-based eMulakat and other citizen services for prisoners and their families.

Infrastructure Services
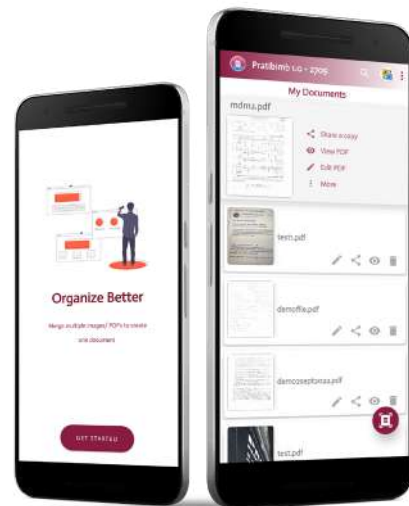
Network Infrastructure

The core of NICNET's backbone in the state has been upgraded to multiple 10 Gbps capacity with redundancy. States are connected through multiple 1/10 Gbps links, and districts have 34/100 Mbps links with built-in redundancy at both state and district levels. Last-mile redundancy for NICNET has been extended to more districts, with primary links from BSNL and secondary links from RailTel/PGCIL.

Create Forms

Share Forms Publicly & Securely

Manage Form Receivers

Manage Form Receiver's Activities

Manage Forms Properties from Console

Collect Data

Share Data with Built In Analytics

Share Data with Web API to External Systems

1652+
Forms

3.88 lakh+
Responses

100+
App downloads

10k+
Contributors

3054+
Admin Users

NIC-FORMS
is a No-Code Quick Data Collection Application that provides Online Form creation, Form sharing, Response collection, Analysis of response, collected through built -in Dashboards and response as easily as creating a document (no special software required), integrated with CollabFiles

▲ Fig 1.5   NIC Forms

Data Centre and Cloud Services

Data Centre Services, including Web Hosting, are provided in a Cloud Environment under NIC National Cloud (MeghRaj) and NIC-MP Mini-Cloud. Services include Security Audit, Remote Publishing, Domain Activation, Internet Dissemination of Results, SSL deployment, and network/device monitoring through OpenNMS Minion.

S3WaaS based Hosting

NIC MP State Centre website and the websites of 53 Districts & 10 Divisions of the State Government run on the S3WaaS (Secure, Scalable & Sugamya Website as a Service) Platform of NIC. These websites feature structured and up-to-date data about the state, improving the Indian Government's online presence with enhanced web design, technology, and content quality. They also comply with the Guidelines for Indian Government Websites (GIGW) and reduce site owner dependency on skilled developers, enabling easier deployment.

Other Initiatives

NIC FORMS

https://nicforms.nic.in/

This application simplifies data collection with a user-friendly, no-code tool. It streamlines online form creation, management, sharing, and response collection. Government employees can efficiently gather geo-tagged data and generate comprehensive reports without coding. Integrated with key services, it eliminates the need for complex web or mobile app development. With ready form validations and easy access control, NIC FORMS ensures a seamless data collection experience. Additionally, one can dispose of online forms once their purpose is fulfilled.

PRATIBIMB

This is an indigenous, open-source Android app designed for secure document scanning and PDF creation. All PDFs are saved locally on your mobile device, ensuring no confidential data storage on cloud servers or outside India. The app digitizes physical documents quickly, organizes them as PDFs, and offers multilingual menu support. Features include image enhancement, quick PDF generation, easy merging, header/footer options, and efficient page management. PRATIBIMB simplifies document digitization, making it portable, space-saving, and convenient for easy sharing and collaboration.

Accolades

NIC Madhya Pradesh has earned numerous accolades for its

▲ Fig 1.6 : Pratibimb
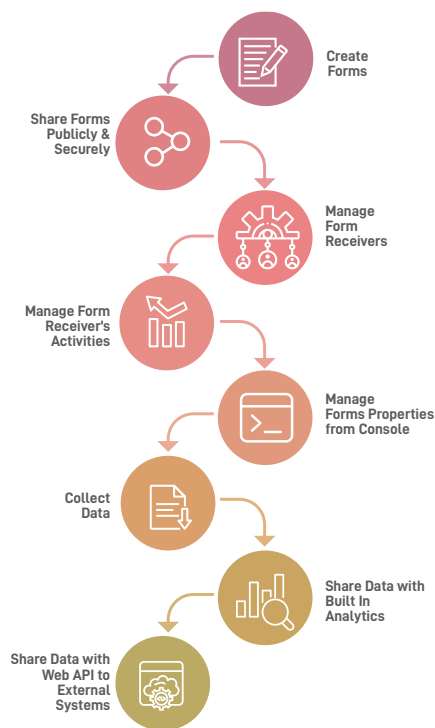
outstanding contributions to e-Governance including

● 24th National e-Governance Award in January 2022 and the CSI SIG e-Governance Award 2021 for eMARG

● CSI SIG e-Governance Award of Excellence in 2022 for GeoReach

● CSI SIG eGovernance Award of Appreciation in 2021 and the Technology Sabha Award 2022 for MP eTender Portal

● CSI SIG eGovernance Award of Appreciation 2022 and the SKOCH Silver Award 2020 for MP Farm Gate App

● CSI SIG Award of Recognition in 2021 for State Cooperative Portal

● CSI SIG eGovernance Award of Appreciation in 2021 for Sparrow

● CSI SIG eGovernance Award of Recognition in 2020 for eOffice MMP

Way Forward

Through its concerted efforts, NIC Madhya Pradesh has played a pivotal role in enabling the government to elevate the standards of governance, enhance the quality of service delivery, and establish more effective channels of citizen engagement within the digital landscape. It will continue to evolve, flourish and engage emerging technologies to enhance the ICT backbone of the state.

Contact for more details

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Sikkim
Supporting the government through ICT

Edited by **KAVITA BARKAKOTY**

Nestled amid the majestic Himalayas, Sikkim captivates visitors with its breathtaking landscapes and tranquil beauty. This enchanting state in India weaves together a rich cultural tapestry, blending indigenous traditions, Buddhism, and contemporary influences. In the heart of this vibrant state lies Gangtok, its capital, offering a vibrant window into its culture and serving as a gateway to the majestic Kanchenjunga, the world's third-highest peak.

Since its inception, NIC Sikkim State Centre has been an unshakable technological cornerstone, propelling the state into the digital age. Through innovative solutions and advanced technolo-

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NIC Sikkim State Centre has been making significant strides in providing a wide array of ICT-based solutions to enhance citizen service delivery within the state. These solutions not only promote convenience and transparency but also play a pivotal role in the government's efforts to uplift the disadvantaged and marginalized sections of society. Through the implementation of numerous eGovernance projects, the State Centre has successfully eradicated intermediaries and misappropriation of valuable resources, thereby fostering a more efficient and equitable development.

gy, it acts as the bridge connecting government services with the citizens, promoting transparency and efficiency across various administrative functions.

With a steadfast dedication to eGovernance, NIC Sikkim plays a pivotal role in streamlining administrative processes and fostering increased public engagement in the state's governance.

ICT Initiatives in the State

NIC Sikkim has initiated numerous ICT projects to enhance good governance in the state. Here are some of the key projects:

Guest House Reservation System

This is an online portal designed to facilitate the booking process for various rooms within Sikkim House and Sewa Bhawan in New Delhi, as well as the Tourism Development Guest House in Kolkata. This portal has been exclusively created and is continuously managed by the NIC Sikkim State Unit, in collaboration with the Home Department of the Government of Sikkim.

Pranali

Sikkim Integrated Financial Management System Ver 2.0, also named Pranali, is being developed and deployed in a calibrated manner since 2020. This system has a vision to complete automation of government expenditure and receipts, along with state budgeting. It further facilitates creation of Financial Data Warehouse for easy analysis and informed decision making and online management of resources and liabilities. Following modules completed and implemented are as follows:

- **Pre-budget Services:** For budget preparation by State Budget Division
- **E-Budget:** Paperless presentation of Budget in the State Legislature
- **Post-Budget:** For enforcing budgetary control on expenditure and receipts
- **RCO Services:** Used by Resource Controlling Officers (RCOs) for resource allocation and monitoring
- **Payroll Services:** Used by each State Government Offices for salaries and wages
- **Nominal Roll Services:** Used by Drawing and Disbursing Officers (DDOs), RCOs and Budget Division for Nominal Roll Preparation
- **DDO Services:** Used by DDOs for preparation of bills, employee management and budgetary functions.

- **Administration Services:** Used by Finance Headquarters for Administrative purposes
- **Treasury Services:** Used by PAOs for pre-checking of bills, raising objections on bills, passing of bills and compilation

LAMS

Land Acquisition Management System (LAMS) is a specialized software for District Collectors' Offices, streamlining land acquisition by assessing land based on type and properties. It maintains a comprehensive landowner database and generates crucial reports for accurate Land Acquisition Compensation.

COI Management System

This web-based application streamlines the delivery of Certificate of Identification (COI) to citizens. It handles application reception, efficient scrutiny, verification, approval, and issuance of this critical document, essential for accessing State Government Services in Sikkim.

Building Permission System

This portal enables architects to register and apply for construction permits for residential and commercial buildings. Drawing files are automatically processed according to building laws integrated into the system, providing citizens with approved blueprints for construction.

Municipal Services

A comprehensive online system has been developed for Gangtok Municipal Corporation to cater to trade license issuances and related services. This includes new licenses, renewals, item management, online payments, and license delivery, eliminating the need for in-person visits. Additional services cover permissions for banners, mega events, and MG Marg events, along with a robust grievance redressal system. This system has significantly reduced GMC office foot traffic and boosted revenue collection.

SNT Online

https://sntonline.sikkim.gov.in

SNT Online is a bus ticket booking system launched by NIC Sikkim in collaboration with NIC Himachal Pradesh for Gangtok-Siliguri route, with plans for expansion. It covers fleet, crew and route management along with mobile apps for travellers, conductors, and inspectors.

SPSC Portal

Sikkim Public Service Commission (SPSC) utilizes this application for conducting all state government recruitments for regular vacancies. SPSC logs in to upload vacancies, while applicants undergo a one-time registration process to apply for any advertised jobs, paying fees online. They can select examination centres and download admit cards as needed. Additionally, SPSC offices can access various reports to facilitate exam conductance.

Other Major Initiatives

eCourts

eCourts Mission Mode Project enhances the Justice Delivery System by ensuring interoperability and compatibility with various systems like National Case Management System, Interoperable Criminal Justice System, National Legal Services Authority (NALSA), and more. It aims to boost judicial productivity, making justice delivery affordable, accessible, and transparent. The project manages caseloads, court management, and case management systems. It includes:

- **Copy Room Software:** Allows online applications for certified copies of High Court orders and judgments for speed and efficiency. Version CRS 1.0 is operational at **https://crshcs.nic.in.**

- **Inventory Management System:** Efficiently monitors and manages Court resources, optimizing resource allocation and reducing wastage

- **Digital Repository:** Stores and manages case files and legal documents

> Sikkim is dependent on NIC for various e-services, Network Connectivity and Video Conferencing services. The necessity was acutely felt all the more during the two years of COVID. The internet facilities provided helped us deliver government services to the public during the hour of need.

Prem Singh Tamang
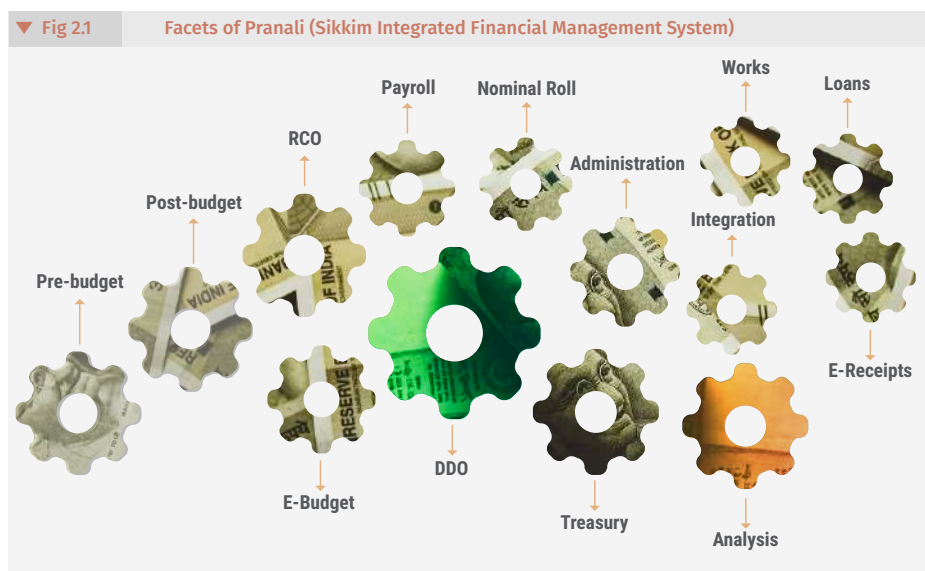Hon'ble Chief Minister of Sikkim

- **Paperless Court:** Digitizes court processes, reducing reliance on physical paperwork for quicker case resolutions

- **Health Record Management System:** Facilitates secure storage and access to employee health records, improving healthcare coordination

- **Employee Record Management System:** Organizes employee-related information and enhancing HR processes within the High Court

- **Online RTI Portal:** Offers a convenient platform for citizens to submit and track RTI requests, improving transparency and public access to court-related information at **https://eservices.hcs.nic.in**

eTransport Project

The Transport Project, which began with just two components (Vahan and Sarathi) in 2005-06, has evolved into a robust ecosystem by 2023, comprising over 1200 RTOs, Dealer registrations, PUCC centres, Fitness centres, Transporters, Citizens, and Insurance firms. It seamlessly integrates sub-systems like eChallan, Homologation, Data analytics, and Next Gen. mParivahan. This technological journey shifted from standalone RTO servers to state registries, eventually to Server Farms in Meghraj with BharatNet/PGCL OFC. It transitioned from Client/Server software to configurable citizen-centric portals and Next Gen. mParivahan mobile Apps powered by APIs/Micro-Services. Moving RTO databases to the cloud enhanced configuration, data security, application upgrades, and accessibility.

With ICT infrastructure support, the number of Regional Transport Offices increased from two to four RTOs for each district in 2010-12, ultimately reaching a total of eight. Online payment of fees/taxes significantly reduced foot traffic at RTOs, with payments possible through the portal and app, including MV tax payments. Electronic payments within RTOs are now facilitated, eliminating the need for bank queues.

The project also ensures automatic updates of new vehicle, insurance, and PUCC data in Vahan,

▼ Fig 2.1 **Facets of Pranali (Sikkim Integrated Financial Management System)**

Pre-budget · Post-budget · RCO · Payroll · Nominal Roll · Administration · Works · Loans · Integration · E-Receipts · E-Budget · DDO · Treasury · Analysis
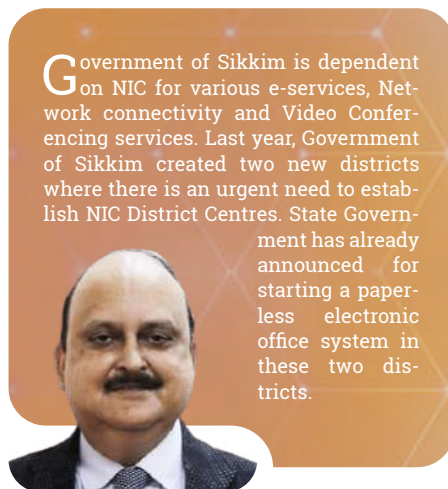
minimizing manual entry errors. Further, eTransport data supports projects like iRAD and VLTDS, fostering robust data sharing with a focus on data privacy and security.

iRAD

iRAD's core objective is to enhance national accident databases by utilizing data analytics to analyze road accident data across the country, ultimately improving road safety and response times for various agencies. It was successfully implemented in Sikkim and inaugurated by the Hon'ble Chief Minister, Shri Prem Singh Tamang, in the presence of Hon'ble Minister, Shri Mingma Norbu Sherpa, along with State Informatics Officer, National Informatics Centre, Dr. L.P. Sharma and Senior Director (IT), Shri D.K. Basnett, with State Resource Manager and District Resource Managers during the Sarathi Samman Diwas event on August 27, 2023. The ceremony was also attended by Speaker of Sikkim State Legislative

▲ Fig 2.2: Hon'ble Chief Minister Shri Prem Singh Tamang and the State Informatics Officer holding the inaugural plaque for iRAD project on the occasion of Sarathi Samman Diwas.

Government of Sikkim is dependent on NIC for various e-services, Network connectivity and Video Conferencing services. Last year, Government of Sikkim created two new districts where there is an urgent need to establish NIC District Centres. State Government has already announced for starting a paperless electronic office system in these two districts.

Vijay Bhushan Pathak
Chief Secretary
Government of Mizoram

Assembly Shri Arun Upreti, Deputy Speaker and many other cabinet ministers, high level officials of Sikkim state Government.

Public Distribution System

The Public Distribution System (PDS) in Sikkim is responsible for supplying essential commodities to beneficiaries, including those under the NFSA Act. This includes 16,500 households under AAY, 324,081 individuals under PHH, and others under different schemes. Almost 100% Aadhaar seeding in PDS enhances efficiency and transparency. Key modules include:

- **EPDS Ration Card Management System:** An online application for issuing, modifying, and managing ration cards with real-time data exchange, available at https://epds.nic.in

- **FEAST (Food and Essential Commodities Assurance and Security Target):** Manages stock inventory, allocation policies, and online order generation with SMS alerts, accessible at https://feastsk.gov.in

- **FPS Automation:** Uses ePOS devices for transaction capture, authentication, and invoice generation, ensuring no bogus transactions. Managed through https://epos.sikkim.gov.in

- **Online Grievance Module:** Allows online lodging and tracking of grievances at https://sikkimpdsgrams.nic.in

- **Transparency Portals:** Provides government orders, beneficiary registers, and more for effective decision-making via https://nfsa.gov.in and https://annavitran.nic.in

- **One Nation One Ration Card:** Empowers migrants for food security with technology-driven portability using Aadhaar-based authentication on ePoS devices

eTendering

This project facilitates all departments of Government of Sikkim to upload the tenders and facilitates bidders to submit their tender bids online. The bidders can also download the tender schedules from the portal. Total 635 e-tenders have been floated worth ₹ 7505 Crore at sikkimtender.gov.in by 127 users from 69 organizations.

ePanchayat

ePanchayat is an umbrella project comprising of PRIASoft (accounts), PlanPlus (planning), National Panchayat Portal (NPP), Area Profiler, Service Plus, National Asset Directory, and Panchayat Award Software Applications and portals. Sikkim has implemented all the modules of ePanchayat and is effectively used by all stakeholders.

SPARROW

This software monitors government officials' work and activities, enabling All India cadre officials (IAS, IPS, IFS, etc.) to submit their annual performance reports (APARs) with Digital Signature or Aadhaar authentication. It also supports
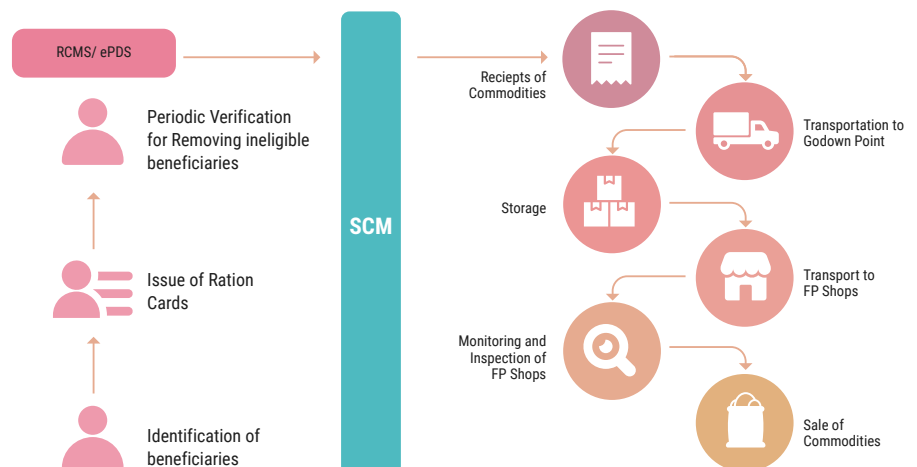
▼ Fig 2.3   An overview of Sikkim Public Distribution System

▲ Fig 2.4: A workshop on EoDB portal at Tourism Department, Tadong

the submission of Annual Immovable Property Returns via the Project Repository Information System Management (PRISM) module. IAS officers exclusively fill out the Executive Record Sheet at **https://supremo.nic.in.**

MGNREGA-MIS

This software solution by NIC comprehensively manages the MGNREGA scheme, overseeing jobholders' information, payments, dues, and disbursements. The State Rural Development Department relies on this software to issue new job cards and perform routine updates through its dedicated portal.

NSP 2.0

National Scholarship Portal v 2.0 (NSP 2.0) facilitates monitoring of various scholarships provided to the students through various schemes. It facilities students and schools to apply for scholarship online and online direct transfer of scholarship amount through integration with PFMS portal. All the schools and students use this portal to avail various types of scholarships. NIC Sikkim has trained all the officers and stakeholders for effective use of this portal.

eDistrict

eDistrict, operating under the National eGovernance Plan (NeGP) by the Department of Information Technology, Government of India, focuses on providing electronic access to high-demand services, especially at the district and sub-district levels. These services fill gaps not covered by other Mission Mode Projects (MMPs), with the goal of enhancing service delivery through well-defined standards and outcomes.

In Sikkim, the project has successfully implemented services such as issuing income certificates, caste certificates, property certificates, and more. It has also streamlined the issuance of permits for restricted / protected areas through a digital solution that allows registered travel agents to submit permit requests efficiently, simplifying the process and promoting electronic access.

Ease of doing Business

This project enables government departments to provide G2C services online via **https://serviceonline.gov.in.** Services configured and launched on the Service Plus platform include

Migrant Labour Registration and Renewal, Legal Metrology (Manufacturer and Repairer), and Packaging License from Legal Metrology. Services like NOC from Fire Department and its renewal, as well as the Log Book for Legal Metrology, are awaiting launch.

Track the Missing Child

This portal adheres to guidelines from Juvenile Justice Act, 2000, Model Rules 2007, and Integrated Child Protection Scheme. It facilitates data entry and matching of missing and found children, as well as tracking the progress of Scheme beneficiaries. Access is provided to 27 police stations and 28 Child Care Institutions across the state.

Core Banking Solution

Core Banking Solution for State Bank of Sikkim automates both government and retail banking through a web-based portal, encompassing ATMs, utility bill payments, and RTGS/NEFT services.

NeVA

National eVidhan Application (NeVA) allows Members of the Sikkim Legislative Assembly to view, submit, and process various proposals in the Assembly House. It comprises a Secure Public Portal, House Application, and Mobile Application. Key features include paperless House sessions, online submission and processing of questions and notices, and online system for reports.

IVFRT

IVFRT aims to enhance online services for travelers entering and leaving India. In Sikkim, a border state with three international borders, this project is crucial. Stakeholders include the Foreigners Registration Office, Local Intelligence Office / Unit, State Home Department, Bureau of Immigration, and Ministry of Home Affairs, Government of India. It facilitates the collection and tracking of information about foreigners visiting the State and the Country.

Online Permit System for Restricted and Protected Areas

On 15th August 2022, during State Independence Day Celebration, Hon'ble Chief Minister, Shri Prem Singh Tamang launched the Online Permit System for visiting Restricted and Protected areas.

OCMMS

This system automates the workflow related to consent management and monitoring Systems in for State Pollution Control Boards (SPCBs)

▼ Fig 2.5: Hon'ble Chief Minister of Sikkim, Shri Prem Singh Tamang, using NeVa during Sikkim State Legislature Budget Session 2023.

▲ Fig 2.6: Hon'ble Chief Minister, Shri Prem Singh Tamang launched Online Permit System for visiting Restricted and Protected areas during State Indpendence Celebration 2022

and Pollution Control Committees. It features multi-level security, online registration for industries / institutions, application submission and approval, document uploading, application monitoring, alert notifications, digital signatures, integration with single-window portals, ePayment options, risk-based inspection, summarized dashboards, and mobile apps for industry and citizens to track Consent / Authorization status.

CONFONET

This project facilities computerization and computer networking of consumer forums and daily uploading and public viewing of order/judgment/cause list/case status from the district consumer forums and Sikkim state dispute redressal commission. Daily orders and judgments are being uploaded and case status being updated on regular basis in the portal https://confonet.nic.in. Alongside, the eDaakhil portal facilitates citizens to file consumer cases online.

Manav Sampada

This all-inclusive solution covers all aspects of Human Resource Management System (HRMS), managing employee functions like appointment, transfer, increment, and retirement. It features a digital dashboard for easy access to employee details by department and role. Currently, around 30,000 employees are already registered on the portal. At this time, it is hosted on the NIC Himachal Pradesh Mini Data Centre.

eForensics

eForensics is an online case registration system developed by NIC as part of the ICJS (Interoperable Criminal Justice System) project. ICJS aims to expedite justice delivery by enabling data exchange among courts, police, prosecution, jails, and forensic labs, integrating CCTNS with eCourt, ePrison, eForensics, and eProsecution. eForensics is currently operational at the Regional Forensics Laboratory Sikkim in Jalipool, Ranipool, Gangtok.

eAbkari

The eAbkari project is a comprehensive supply chain management system for Beverage Alcohol, Medicinal Alcohol, Industrial Alcohol, and Life Saving Narcotic Drugs. It aims to regulate and minimize social and public health issues while ensuring revenue collection from excisable articles. It offers over 60 eServices. In Sikkim, the eAbkari project has been replicated from West Bengal over the past few years. Currently, services like Grant & Renewal of Licenses, Packaged Liquor Label Registration, and Issuance of import Permits are available online in a workflow-based manner. More services are being added, and there's also a mobile app to capture the location of excise establishments.

ePrision

ePrison, developed by NIC HQ, is a centralized application that integrates all activities related to prison and prisoner management. It provides real-time information about inmates to prison officials and other entities involved in the Criminal Justice System.

In Sikkim, both State Jail Rongyek and District Jail Namchi are part of the ePrisons portal, where prisoner details are recorded daily. Integration with different wings of the ICJS project is planned to enhance transparency.

Jeevan Pramaan

Jeevan Pramaan is a digital service for government pensioners, offering a biometric-enabled Digital Life Certificate. It simplifies and streamlines the certification process, providing convenience for pensioners. This system is fully operational in Sikkim.

LREMS

Land Revenue Event Management System (LREMS), initiated by District Administration Gangtok and developed by NIC East District, is a mobile app that allows the public to view the monthly schedule of Amin (Surveyor) events and reserve available dates for their use. This project significantly streamlines the land survey process conducted by surveyors.

Water & Sewerage Billing System

This is an online platform aimed at reducing the need for beneficiaries to visit departmental offices for water and sewerage bill processing.

Currently, it facilitates the generation of Water & Sewerage bills by the PHE Department, with citizens able to make online payments through the website https://ephed.Sikkim.gov.in.

Apada Sewa Mobile App.

This app provides digital solution for disaster surveys, enabling quick release of relief funds and restoration efforts. It modernizes hazard site surveys, reduces duplicate applications, and streamlines the process.

Officials can report calamities, assign surveys, review reports, and approve / reject applications. Surveyors can manage assigned work, geotag locations, submit reports with evidence, and check application status. Further, District Collectors can oversee district-wide activities.
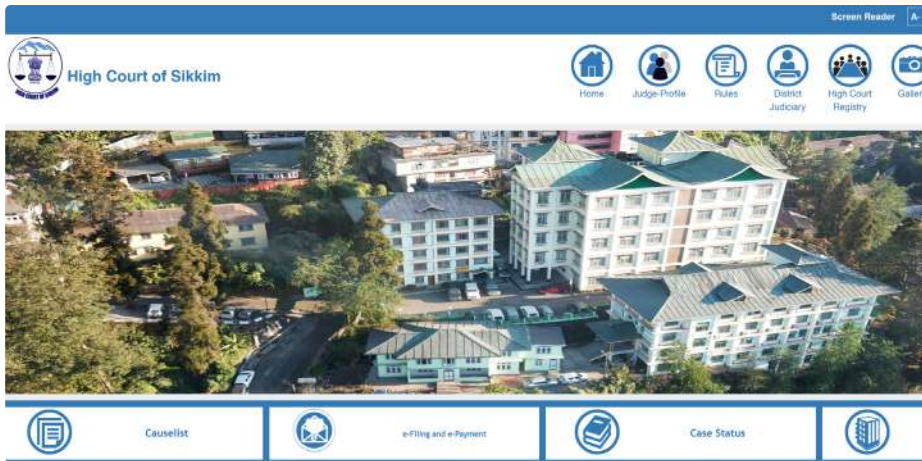
Infrastructure and Networking Services

State Mini Data Centre

NIC has established state-of-the-art National

▼ Fig 2.7: Launch of eDaakhil portal by Shri Arun Upreti, Hon'ble Minister of Food and Civil Supplies

▲ Fig 2.8: High Court of Sikkim's Homepage

Data Centres and Mini Data Centres in various state capitals, with the NIC-Sikkim Data Centre being a notable example. Operational since August 2021, this facility operates around the clock, ensuring uninterrupted access to critical ICT infrastructure and efficient system management by on-site skilled personnel. NIC-Sikkim Data Centre plays a crucial role in supporting various e-Governance initiatives at the state and national levels. It offers high application availability, rapid scalability, and efficient resource management, enhancing its vital role in modern governance. It provide the following range of service models:

● **Platform as a Service (PaaS):** PaaS provides pre-installed web and database servers so that one can publish and run web application without worrying about server setup

● **Infrastructure as a Service (IaaS):** IaaS provides basic virtual compute infrastructure resources like CPU, Memory, Disk Storage attached to blank Virtual Machines with allowing one to install Operating Systems, using ISOs, from scratch and customization

● **Anti-virus Service:** Virus protection is an important part of keeping the systems, applications and data in one's cloud environment safe from viruses, spyware and other malware threats. Antivirus service is made available to cloud users as a managed service

● **Vulnerability Assessment Service:** This service helps you to assess Servers and networks for identifying the security vulnerabilities i.e. threats and risks they pose. A vulnerability assessment process detects and classifies system weaknesses in Servers, networks and communications equipment and predicts the effectiveness of countermeasures

● **Backup Service:** It allows one to backup the data and application code lying inside the Cloud Servers based on various parameters like frequency, retention period etc.

● **Storage as a Service (SaaS):** It offers on-demand storage, including file and block storage. It encompasses methods like File, Block, and Object storage for data storage on Network Attached Storage (NAS), Storage Area Network (SAN), and

Object storage systems, with each volume / object functioning as an independent component controlled by an external server operating system / application

● **Load Balancer as a Service:** Load balancing Service allows to efficiently get incoming network traffic requests distributed across a group of back-end servers (e.g. server farm / server pool). This service is available on demand for critical application requiring high availability and easy workload manageability

● **Public IP Service:** A public IP address is an IP address that can be allocated to any of your application on cloud server to make it accessed over the Internet

Web Development

NIC Sikkim has developed websites for several government institutions and organisations including High Court of Sikkim, Sikkim Judicial Academy, Sikkim State Legal Service Authority, and Sikkim Law Department. These websites serve as comprehensive online platforms, providing detailed information about each department's functions and activities. After a thorough security audit, all websites are now successfully hosted, allowing the general public to access comprehensive departmental information.

Web Domain Services

NIC Sikkim offers web domain registration and creation services to both State and Central Government Departments through https://registry.gov.in and https://eforms.nic.in, ensuring efficient online presence.

Accolades

● Digital India Gold Award 2022 for eTransport Project

● CSI Award of Excellence 2022 for Faceless/Contactless Services under eTransport Project

● Education ICON Award 2021 for Online Education from Kites Craft Production

● Sikkim Independence Day Award 2018

● Sikitex Award for eGovernance in Sikkim for three consecutive years (2009, 2010, 2011)

● Sustainability Award for Community Information Systems

Way Forward

NIC Sikkim's dedicated teams are driving digital governance in Sikkim with ambitious projects on the horizon. These include eHospital, services for the Municipal Corporation, the Marking Order system for Forest Department, improved Drinking Water and Sewerage Billing, India Enterprise Architecture integration, and finalizing eAbkari modules, among others.

▼ Fig 2.9: Inauguration of NIC Sikkim's New Office by Hon'ble Chief Minister of Sikkim, Shri Prem Singh Tamanag, at Tashilong Secretariat Complex, Gangtok in presence of Senior Hon'ble Ministers and Officers.

Kaithal, Haryana

Pioneering Excellence in Grassroots Digital Governance

Edited by **RAJEEV JOSHI**

NIC Kaithal, established in the historically significant district of Haryana in 1989, is a leading exemplar of Grassroot-level Digital Governance. The District Centre has been instrumental in providing state-of-the-art ICT services to District Administration, Central/State Government departments, and citizens. Notable ICT projects include SARAL, eOffice, and webHalris. These projects not only fostered transparency, but enhanced citizen service delivery.

ICT Initiatives in the District

Modern Revenue Record Room (MRRR): NIC Kaithal collaborated with the Revenue Department to establish the MRRR, digitizing over 33 Lacs old revenue records. This initiative ensures secure, tamper-proof storage, and online accessibility through barcoding, enhancing efficiency for revenue officials. MRRR was inaugurated by the Hon'ble Chief Minister of Haryana, Shri Manohar Lal, on June 24, 2017, with a commitment to replicate it in all 22 districts of Haryana.

e-Parole Processing System (ePPS): Developed a web-based application to streamline and monitor parole / furlough applications. It involves multiple stakeholders and provides real-time status updates through SMS. Currently, the application has been implemented in the districts of Kaithal, Hisar, and Ambala.

Matritva Mobile App: Designed to monitor the health of pregnant women, this app simplifies communication between Anganwadi workers and expectant mothers, reducing manual record-keeping. The app got recognized at the District Governance Mobile App Challenge 2021 and was among top 3 apps in the state.

Saral Doot: NIC Kaithal introduced Saral Doot, offering doorstep registration and delivery of SARAL services, enhancing citizen accessibility and convenience. Currently, 29 government-to-citizen services are available, with more to come.

Deepak Khurana
Technical Director & DIO
dk.khurana@nic.in

Recognized for its pioneering work in Digital Governance, NIC Kaithal has established itself as a leading ICT service provider for District Administration stakeholders, enhancing transparency and streamlining citizen service delivery. Further, NIC Kaithal is at the forefront of harnessing emerging technologies to craft innovative IT solutions, propelling its mission to drive positive change and efficiency.

e-token: Integrated with the SARAL portal, this application helps in effective management of queues at SARAL Kendra. and is deployed at Antyodaya Saral Kendra locations across Haryana.

Grievance Redressal Management System (GRMS): Designed to process citizen grievances submitted to the District Commissionerate. It automatically routes the grievances to Heads of Departments for efficient resolution.

Other Key Initiatives

In addition to aforementioned initiatives, the District Centre has been pivotal in promotion of various Centre and State e-Governance projects. Some of the key projects are briefly profile include:

SARAL (http://saralharyana.nic.in): Providing extensive ICT support for the SARAL (Simple, All-Inclusive, Real-Time, Action-Oriented, Long-Lasting) portal. NIC Kaithal manages 7 Antodaya Saral Kendras, offering over 650 e-Governance services from 41 departments at the district levels. The district consistently maintains a high Saral Score and has received recognition from the Rights to Service Commission, Haryana.

eOffice: Implementing eOffice in over 41 departments for efficient file management and processing since 2021. NIC Kaithal has trained over 500 employees to facilitate seamless adoption.

WebHalris: Offering technical support for the maintenance of 277 Jamabandies across 7 Tehsils/Subtehsils, enabling the trouble-free update of mutations, Nakal generation, and reconciliations. Additionally, ICT services support e-Registration, integrating webHalris with various departments for property-ID and No Due Certificates.

Parivar Pehchan Patra (PPP): Providing proactive services based on eligibility, simplifying admissions processes and eliminating redundant documentation. PPP is linked to all admissions, streamlining the process.

e-Transport (Vahan & Sarathi): Extending ICT support to RLA & RTA authorities for vehicle registration and driving license, enhancing capacity building for DEOs of authorities and dealers.

e-Public Distribution System (e-PDS): Offering extensive ICT support for the implementation of ePDS, seamlessly integrated with Parivaar Pehchaan Patra (PPP) since January 2023. PPP plays a crucial role in generating Ration Cards based on income criteria.

Auto Appeal System: Implementing a system for auto-appeals and citizen-initiated appeals to ensure compliance with the Right to Service Act.

CM Window: Facilitating grievance redressal and monitoring across all departments and districts in Haryana, enabling citizens to track their grievances online.

Jan Samvaad: Capturing applications for demands, suggestions, and grievances submitted to the Chief Minister during Jan Samvaad programs at the village and town level, with a workflow-based process.

Social Media Grievances Tracker: Capturing and filtering citizen grievances aired through social media, allowing for quick resolution by dedicated teams.

▲ **Fig. 3.1: DIO Kaithal briefed Hon'ble Chief Minister Shri Manohar Lal about the Modern Revenue Record Room concept during the MRRR inauguration event**

Human Resource Management System (HRMS): Implementing HRMS for District Administration staff, covering various aspects of employee records, leaves, transfers, promotions, and more.

Integrated Road Accident Database (iRAD): Participating in the Ministry of Road Transport & Highways' iRAD initiative since August 2021, providing training to over 500 employees. iRAD mobile app allows the capture of accident details for road safety analysis.

District Kaithal Website (https://kaithal.gov.in): Maintaining a bilingual website compliant with the GIGW standard, providing authentic information on Kaithal District.

IT Support for Elections: Providing comprehensive ICT support for various elections, including voter list preparation, employee data management, polling personnel deployment, nomination data capture, EVM randomization, live poll monitoring, and live result counting.

Additionally, several other Central / State projects such as NDAL-ALIS, Meri Fasal Mera Byora, Integrated Financial Management System, Uttam Beej Portal, SWAMITAV, Mukhya Mantri Antyodaya Parivar Utthan Yojana (MMPUY), Marriage Registration, Birth and Death Registration, Revenue Court Cases Monitoring System, AEBAS

have been successfully replicated in the District, furthering the district's digital transformation and efficient service delivery.

Important Events Organized

As the IT nodal department in the district, NIC Kaithal consistently offers technical support for various high-profile events

● Providing technical support for video conferencing during Development Project inaugurations by Hon'ble Chief Minister and other Ministers

● Ensuring necessary ICT arrangements for live streaming of major District Level Programs since January 2020

● Facilitating live streaming for the State Level Program, Sant Shree Dhana Bhagat Jayanti, presided over by Sh. Jagdeep Dhankar, Hon'ble Vice President of India, and Sh. Manohar Lal, Hon'ble Chief Minister of Haryana, held at Village Dhanuri, District Kaithal

Accolades

● NIC Kaithal was honored with the Silver award by Hon'ble Union Minister, MeitY, during Tech-Gov. 2019 for the development of the 'CollabDev:

PAC – Project Advisory Committee' module under the 'Project Repository Information System Management (PRISM)' subtrack

● DIO Kaithal was felicitated by Shri Anoop Dhanak, Hon'ble State Minister for Revenue & Disaster Management, Industries & Commerce Department, and Shri Pradeep Dahiya, IAS, Deputy Commissioner, Kaithal, during Republic Day-2022 recognizing the excellent ICT services provided by the District Centre

● Smt. Kamlesh Dhanda, Hon'ble State Minister for Woman & Child Development, Haryana, honored DIO Kaithal on the occasion of Good Governance Day. Dr. Sangeeta Tetarwal, IAS Deputy Commissioner, Kaithal, and other Heads of Departments were also present at this event

> I am pleased to extend my sincere congratulations to NIC Kaithal for exceptional contributions towards promoting ICT and e-Governance Services in District. NIC, Kaithal has provided exemplary services to District Administration by ICT project implementation like SARAL, eOffice, Land Records Digitization (webHalris), Smooth conduct of various Elections etc. and development of innovative mobile and web applications.
>
> I commend the appreciation to DIO Kaithal who have been working tirelessly and relentlessly for providing support and services to District Administration. I hope to carry forward the Digital Governance Services to the grass root level for the benefit of citizens.

Jagdish Sharma, IAS
Deputy Commissioner, Kaithal

Way Forward

NIC Kaithal excels in implementing digital governance, enhancing service delivery to fulfill the 'Digital India' vision. It is committed to provide to delivering innovative, efficient ICT solutions to District Administration and government offices at all levels.

Contact for more details

District Informatics Officer
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▼ **Fig. 3.2: Dr. Sangeeta Tetrawal, IAS, then Deputy Commissioner of Kaithal, launched the SaralDoot initiative and personally delivered Certificates to citizens' doorsteps.**

Khowai, Tripura

Transformative IT Initiatives Shaping the District's Future

Edited by **KAVITA BARKAKOTY**

Established in 2012, NIC Khowai District Centre is dedicated to bolstering governance, services, and connectivity in the district through cutting-edge IT solutions. Its focus areas include advancing digital infrastructure, enhancing network connectivity, and fostering the adoption of e-Governance Solutions.

ICT Initiatives in the District

BMS

https://bms.tripura.gov.in

The Beneficiary Management Ecosystem (BMS) is a comprehensive system designed to manage beneficiaries, payments, and benefit visualization efficiently. It includes functional applications such as the Citizen Portal, Core BMS, Payment Switch, and Beneficiary Dashboard, which are deployed statewide for 61 different schemes.

Notably, NIC Khowai District Centre has demonstrated exceptional commitment by successfully implementing 31 state Social Pension Schemes within the district, further enhancing the reach and impact of the system.

Jami Tripura

https://jami.tripura.gov.in

The successful computerization of Land Records in the District has been accomplished through the implementation of the eJami application. This achievement has enabled the introduction of citizen-centric services such as "Digitally Signed Certified Copy of Record of Rights," "Online Payment of Land Revenue," and "Online Mortgage Request by Banks" through the Jami Pariseva Portal. Furthermore, to enhance accessibility for the local population, CDAC's Language Transliteration Service has been seamlessly integrated into the eJami portal, making it even more user-friendly and inclusive.

Sushant Kumar Debnath
Scientist-C & DIO
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Since its inception, NIC Khowai District Centre has been a crucial force in providing technical support and fostering skill development among diverse stakeholders. Leveraging its ICT expertise, NIC Khowai efficiently implements numerous National and State-level ICT projects with transparency. The centre has effectively raised awareness about the significance of ICT applications, and today, citizens are reaping the tangible benefits and practicality of these applications in their daily lives.

NGDRS

https://ngdrs.tripura.gov.in

The National Generic Document Registration System (NGDRS) offers comprehensive document registration solutions catering to citizens and various stakeholders, including the Registration department, Banks, Deed Writers, Advocates, and more. As of February 1st, 2022, the district has seamlessly integrated NGDRS with critical databases like Land Records and e-Stamps, expanding its capabilities to encompass services like Property Assessment, Appointment scheduling, Registration, and Online Payment. Notably, the District Centre has efficiently implemented NGDRS across all Sub-Registry Offices within the district, ensuring widespread accessibility and convenience.

eDistrict

https://edistrict.tripura.gov.in

eDistrict Tripura is an advanced system that harnesses NIC's ServicePlus metadata-based e-Service delivery framework, incorporating a Low-Code No-Code (LCNC) architecture to deliver electronic services to citizens seamlessly. This extensive system extends its coverage to all Sub-Divisional Magistrates (SDM) offices, offering a diverse range of approximately 60 eGovernance services. By doing so, it ensures accessibility, efficiency, and convenience in delivering essential services to the public

EPDS

https://epds.tripura.gov.in

The Election Personnel Deployment System (EPDS) Application, developed by NIC Khowai District Centre, has been a cornerstone of election management in the state since 2012, providing centralized oversight of polling personnel for Parliamentary, Assembly, and Local Body Elections. Its key functionalities encompass:

- Randomization of Polling Personnel, Counting Personnel, and Micro-Observers
- Generation of Appointment Letters and Identity Cards for Polling Personnel, Counting Personnel, and Micro-Observers
- Efficient Exemption Management processes

This system ensures the smooth and organized deployment of election personnel, contributing significantly to the electoral process.

iRAD

VAHAN, SARATHI, eChallan, and Pollution Under Control Certificate (PUCC) module are integrated systems designed to streamline and modernize various aspects of vehicle registration, driving licenses, traffic enforcement, and pollution control in India. VAHAN manages vehicle registration and related services, SARATHI handles driving licenses, eChallan facilitates digital traffic violation fines, and PUCC focuses on pollution under control certification, collectively enhancing the efficiency and compliance of the transportation ecosystem.

Following the successful implementation of VAHAN, SARATHI, eChallan, and PUCC, the District Centre has proactively undertaken the implemen-

▲ Fig.4.1: Virtual Training on iRAd to Khowai Police

tation of iRAD (Integrated Road Accident Database) to collect and share road accident data with Transport, Police, Health, and Highway authorities.

Khowai District Website
https://khowai.nic.in

Khowai District website serves as a user friendly online hub, offering vital information and services to both residents and stakeholders. It provides easy access to administrative updates, local news, government initiatives, and contact information for district offices, streamlining access to digital resources and services.

The District website is constructed using the S3WaaS architecture and adheres to the Guidelines for Indian Government Websites (GIGW 3.0), guaranteeing a user-friendly and compliant online platform for all district-related information and services.

Vahan, Sarathi, eChallan, PUCC, and eHospital and eBloodbank

eHospital and eBloodBank are innovative healthcare solutions that have been introduced at Khowai District Hospital. eHospital streamlines hospital management processes, enhancing patient care, and administrative efficiency. On the other hand, eBloodBank ensures efficient blood supply management, facilitating timely access to life-saving blood products for patients in need. Together, these systems contribute to improved healthcare delivery in the district.

Public Distribution System (PDS) Computerization
https://epdstr.gov.in/

The entire domain has been comprehensively automated, encompassing Ration Card Management, Supply Chain Management, and Fair Price Shop Automation. This end-to-end automation guarantees a seamless and highly efficient process, from initiation to completion, ensuring smooth operations throughout.

Other Key Initiatives

Revenue Court Case Management System (RCCMS)
https://sewasetu.assam.gov.in

Revenue Court Case Management System (RCCMS) is a web-based application developed by the Khowai District Centre and implemented across the state to efficiently manage Revenue Court Cases. This application simplifies the process of filing Revenue Court Cases, enables real-time tracking of case status, and allows for the easy recording and downloading of intermittent and final judgment copies through SMS links.

Infrastructure and Network Support

NIC Khowai District Centre embarked on its journey in 2012 with an initial 4 MBPS Tripura State Wide Area Network (TSWAN) connectivity. This connectivity was subsequently upgraded to a robust 100 MBPS National Knowledge Network (NKN) infrastructure in 2015, marking a significant enhancement in its network capabilities and capacity.

N IC District Unit in Khowai has played a significant role in the promotion of ICT use and execution of State and Central e-Governance programs, information sharing through District websites, providing computerization help & implementing all kind of Applications of ECI and SEC during the Elections, etc., all of which are very praiseworthy. I am certain that NIC will keep up the good job and continue to offer technical support for the effective deployment of ICT Services for the benefit of the citizens.

Dilip Kumar Chakma, IAS
Deputy Magistrate, Khowai

Awards

Khowai District has been honored with the "Bhoomi Samman 2023" by Hon'ble President of India, Smt. Droupadi Murmu, for outstanding achievements in implementing the Digital India Land Record Modernization Programme (DILRMP) in the district.

Way Forward

NIC Khowai District Centre has played a pivotal role in driving the digital transformation of the district and is dedicated to continuing its commitment to embracing cutting-edge technologies in governance.

▼ Fig. 4.2: Khowai District Website

Contact for more details

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Mahbubnagar, Telangana

Adopting citizen-centric approaches for better eGovernance

Edited by **SANGEETHA MANJUNATH**

I n the heart of Telangana, NIC Mahbubnagar stands as a beacon of technological advancement and digital empowerment. Since its inception, the District Centre has been at the forefront of driving innovation, efficiency and transparency in governance through the effective use of Information and Communication Technology. It has consistently played a pivotal role in providing technical support to various government organizations and initiatives.

ICT Initiatives in the District

Mana Badi Kosam Mobile App

The app was created in response to a proposal by then District Collector, Shri S. Venkata Rao, to encourage families to voluntarily contribute ₹ 100 each for school welfare. Designed by NIC, this app allows the collection of donations from both parents and alumni. This app was also featured in the "District Mobile App Challenge."

eOffice

The District Centre led the successful eOffice implementation across all district departments, making it the first district in the state to achieve this milestone. Following the district's bifurcation into Narayanpet and Mahabubnagar in 2019, eOffice support ensured smooth file migration between departments of both districts, boosting transparency, accountability, and eGovernance efforts. As of now, over 800 users from 132 offices and 76 departments are

AEBAS

Aadhaar Enabled Biometric Attendance System (AEBAS) was first implemented in key district departments like Health, Women Welfare, and the

NIC Mahbubnagar has been a cornerstone of technical support and skill development among diverse stakeholders. With strong ICT expertise, it efficiently executes several national and state-level ICT projects, ensuring transparency. The centre has successfully raised awareness about the significance of ICT applications, and citizens now experience their practical benefits in daily life.

District Collectorate. After the move to the new collectorate building (IDOC), AEBAS was extended to all 67 departments. Employees were issued ID cards with Mi-fare RFID technology, streamlining attendance tracking and eliminating manual ID entry, leading to substantial time savings.

Praja Vedika

http://prajavedika.mbnrgov.in

Praja Vedika is a G2G and C2G public grievance portal. It offers a dedicated platform for citizens to submit petitions and grievances, directly to the Office of Chief Minister, both online and in-person, with the primary goal of ensuring efficient resolution.

Dharani

https://dgts.telangana.gov.in

Dharani Collector Grievances Tracking System is a G2G application for tracking grievances within the Collectorate and Tahsildars. It captures

complaints submitted to the District Collector and facilitates communication between Tahsildars and Collectorate sections. This streamlines grievance handling, allowing the District Collector to promptly review and respond to grievances.

File Disposal Management System

http://filedisposal.mbnrgov.in/

File Disposal Management System streamlines the disposal of old files. It enables the District Collector to review disposal status weekly, aiming to complete the process within a month. Additionally, it uploads all active files to eOffice for convenient access.

Prajavani

http://cpgrams.ts.nic.in/

Since October 2017, the District Centre has been providing technical support for Centralized Public Grievance Redress and Monitoring System (Prajavani / CPGRAMS) to district administration. Additionally, this system has been successfully implemented by the District Centre in Wanaparthy, Nagarkurnool, Narayanpet, and Jogulamba Gadwal Districts, expanding its coverage beyond Mahabubnagar.

Mahbubnagar District Website

https://mahabubnagar.telangana.gov.in/

Mahabubnagar District website, developed using the S3WaaS Framework, stands out as the first official website to provide content in three languages: Urdu, Telugu, and English. This multilingual approach boosts accessibility and user engagement, ultimately enhancing digital governance and government transparency.

eLaabh

http://elaabh.telangana.gov.in

eLaabh is a web-based system that manages government subsidies for dairy farmers and fishermen in Telangana. It requires one-time registration, after which users can apply for eligible schemes online. The system generates a unique ID and sends SMS acknowledgments. Field officers verify applications, and eligible applicants receive subsidies directly in their bank accounts. Necessary support has been provided to User Department for making the initiative a success.

M. Satyanarayana Murty
Technical Director & DIO
msmurty@nic.in

Other Key Initiatives

SPARROW
https://sparrow.eoffice.gov.in/

SPARROW is an online system used by the State and Central Government for comprehensive performance appraisal of their employees. It allows officers to electronically fill out their Performance Appraisal Reports (PAR) conveniently.

Mission Bhagiratha
https://missionbhagiratha.telangana.gov.in/

Mission Bhagiratha, a flagship initiative of the Telangana government, aims to provide safe, treated piped drinking water to both urban and rural populations in the state. To enhance its

NIC Mahabubnagar District Centre is at the forefront of implementing various e-Governance projects, including the eOffice Project, across all departments of Mahabubnagar. It plays a pivotal role in driving the adoption and promotion of e-Governance initiatives.

With the active support of NIC Mahabubnagar, our District has achieved remarkable success and garnered numerous Awards and accolades. In addition, we have developed a mobile app called "Intiki Vanda – Badiki Chanda" to collect a voluntary contribution of 100 rupees from each family. This initiative aims to allocate funds for the developmental work of schools in our District.

Furthermore, we have created dedicated websites for the Hon'ble Excise Minister's Camp Office, facilitating the collection of grievances. We have also established the DGTS Portal to streamline grievances related to the Dharani Portal.

The determination and initiative of NIC District Centre in Mahabubnagar have fostered a favorable environment for the implementation of numerous e-Governance projects. This progress has paved the way for the District Administration to expand its efforts and take a leading role in this domain, positioning our District at the forefront of digital governance.

Ravi Gugulothu, IAS
Collector & District Magistrate
Mahbubnagar

▲ Fig. 5.1: "Naa Badi Kosam" mobile app inaugurated by then District Collector & Magistrate, Shri S. Venkata Rao, IAS, in the presence of the District Informatics Officer and District Education Officer.

effectiveness, the program utilizes advanced technology through the Progressive Web Application (MB-TAP). This app is instrumental in capturing geo-location details and photographs of Overhead Service Reservoirs (OHSRs) and household beneficiary tap connections. This tech-driven approach underscores Mission Bhagiratha's dedication to ensuring portable and safe drinking water for all Telangana households, promoting transparency and efficiency in the program's delivery.

NDAL-ALIS

This system streamlines the issuance of arms licenses, a crucial responsibility of the District Magistrate. It simplifies record-keeping for arms licenses, ensuring accurate tracking of licenses issued for individuals and their intended purposes. ALIS is employed across all 5 districts of the former Mahabubnagar region, with training provided to NFEs and department staff to facilitate its usage.

Jeevan Pramaan
https://jeevanpramaan.gov.in

NIC Mahbubnagar has implemented Jeevan Pramaan at the district level, a biometric-enabled digital service for pensioners of government organizations, using Aadhaar for authentication. Successful authentication generates a Digital Life Certificate stored in the Life Certificate Repository. Pension Disbursing Agencies can access it online, and the service includes a Face Recognition app for added security.

PDS
https://epos.telangana.gov.in

Public Distribution System (PDS) enables the distribution of food grains and essential items to a significant number of economically disadvantaged individuals. This is accomplished through a network of Fair Price Shops, offering subsidized prices on a regular basis. Additionally, monthly allotment support for Mid-day meals is provided to support educational department and Scheduled Castes Development Department (SCDD).

Technical Support

NIC Mahbubnagar has played a pivotal role in providing support to various organizations, with notable contributions including:

● Assisting in achieving the "Guinness World Record for 2-crore Seed Balls preparation by SHG Women" in 2021

● Offering extensive support during COVID-19, from serving as a Nodal Officer for Covid-19 grievances and setting up a COVID-19 Command Control Room to aid in the establishment of COVID-19 helplines, telemedicine rooms, and more

● Provided technical assistance for elections, including Assembly Elections 2018, Loksabha Elections 2019, among others

Awards

● Skoch Order of Merit 2021 for Computerisation & Digitization of Record Room

● Governance Now Digital Transformation Award 2019 for eOffice

● Digital Web Ratna Gold Award 2019 for Mahbubnagar District Website

● Skoch Order of Merit 2018 for eOffice

● Gems of Digital Telangana 2017 for eOffice

Way Forward

NIC Mahbubnagar is committed to fostering an ICT-enabled environment for transparent and efficient swift service delivery by the district administration, ensuring citizen welfare and grassroots development, with a focus on adapting to evolving technology for future enhancements.

Contact for more details

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Ranchi, Jharkhand

Pioneering ICT and e-Governance for a Digital Jharkhand

NIC Ranchi, established after the creation of Jharkhand in 2000, has played a pivotal role in promoting an ICT culture in the region. Notably, NIC Ranchi developed the mKarmik mobile app, streamlining law and order duty assignments, and introduced an Online Polling Personnel Data Collection Portal, enhancing election processes. These initiatives have not only made governance more efficient but also served as models for other regions. As a centre for technological innovation and eGovernance excellence, NIC Ranchi continues to contribute significantly to Jharkhand's progress in the digital age.

ICT Initiatives in the District

Ranchi District Website
(https://ranchi.nic.in/)

Ranchi District has unveiled a CAW Certified website utilizing the Secure, Scalable & Sugamya Website as a Service (S3WaaS) Framework, making it the first in Jharkhand to do so. This website serves as the primary communication channel for Ranchi District Administration. It offers user-friendly interfaces, ensuring compliance with the GIGW standards and delivering up-to-date information.

Shiv Charan Banerjee
Scientist-D & DIO (till Aug'23)
shiv.banerjee@nic.in

Rajeev Ranjan
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Reema Kujur
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NIC Ranchi has championed the emerging technologies, successfully implementing various projects for all three: Central Government, State Government, and District Administration. Notable achievements include integration of VR Smart Class, development of m-Karmik mobile app, and implementation of District Human Resource Portal, and innovative solutions such as m-Appointment letters during the COVID-19 pandemic and efficient law and order duty assignments.

VR Smart Class Room

Virtual Reality Smart Classrooms, a fusion of immersive VR technology and conventional teaching methods, are revolutionizing education. In Ranchi, 21 government schools have adopted the VR system for enhanced learning.

Video Conferencing

District Centre provides video conferencing (VC) support from the District Collectorate to all 18 blocks and 22 circles, enabling direct communication between District Collector and other senior government officials with blocks and panchayats. Over 100 VC sessions have been organized current year.

Online Polling Personnel Data Collection Portal

The main objectives of this project include achieving full computerization for enhanced time efficiency, minimizing errors, automating system management, centralizing database control, and optimizing resource utilization for election-related tasks. Not only has it significantly improved operational efficiency, but it has also set a valuable example for other districts to follow.

Initiatives During COVID-19

COVID-19 Online Helpdesk

This system captures grievances related to medical assistance, e-Pass, COVID result status, groceries and more. With over 25,000 grievances received and resolved during the pandemic, the system is used by all district officers to address citizen grievances.

COVID-19 HR Portal

This HR database helps in deployment of Magistrates, Doctors, and Para-Medical Officials to containment zones and quarantine centres during the pandemic.

GIS Mapping of Mukhyamantri Dal Bhat Kendra

Using Google Maps, this system helps the district administration locate Dal Bhat Kendras for efficient food distribution to migrants during the COVID-19 crisis.

COVID Chat Bot Support

The District Centre provided the COVID chatbot support through the district website in order to support citizens and addresses their queries in a round the clock manner.

Mobile Apps

Following are the mobile apps designed and developed by NIC Ranchi:

Poll Duty Mobile App

The Poll Duty Mobile App streamlines communication plans and delivers crucial messages to polling officers, sector officers, zonal magistrates, and the district control room on polling day.

m-Karmik

m-Karmik app enables deployment of officials for magistrate duty during events and emergency

situations at district level. The app further allows government officials, employees, police personnel, and home guards to check their duty status and request exemptions in case of an urgency.

Other Major Initiatives

The District Centre has effectively implemented various State and Central Government flagship programs, such as IFMS, RCMS, PDS, e-Hospital, Parivahan, eCourts, ePrison, IVFRT, NDAL & ALIS, JHARSEWA, JHARBHOOMI, e-Revenue, ULPIN, JKRMY, MSRY, PM-KISAN, JRFRY, and PG Portal, to advance e-Governance in the district. A few significant ones are highlighted below:

PM-KISAN and JKRMY

For the successful execution of PM Kisan Sanman Nidhi & Jharkhand Krishi Rinn Maafi Yojana (JKRMY), NIC Ranchi conducted training for all users to ensure seamless data entry.

iRAD

Launched in January 2022 by the Chief Secretary and DGP of Jharkhand, NIC Ranchi successfully deployed and conducted training sessions to all stakeholders. Additionally, all District Hospitals, NHAI, and District Police have been onboarded into the system. This has resulted in Ranchi having the highest iRAD records on the online portal.

e-Hospital

NIC has implemented e-Hospital in Ranchi Sadar Hospital, a stategovernment run 500-bed facility. The e-services includes registration, OPD, billing, and emergency services. The hospital now registers approximately 1,000 OPD slips daily through the e-Hospital system and has established a separate ABHA Registration counter for swift OPD slip generation.

JHARSEWA

NIC Ranchi has successfully implemented all services of the JHARSEWA portal, a unified platform enabling citizens to apply for various services online. This platform is accessible through Pragya Kendras (CSC Centres), Circle offices, ULBs, and Gram Panchayats throughout the district.

Chancellor Portal
(https://jharkhanduniversities.nic.in)

Ranchi has implemented the Chancellor Portal serving as a centralized platform for the nine State Universities of Jharkhand under the Department of Higher Education and NIC Jharkhand. This portal handles online admission and registration for all State Universities in Jharkhand. It has received accolades from the Hon'ble Governor-cum-Chancellor of State Universities in Jharkhand.

Technical and Network Services

Following are the services are being currently offered by the District Centre

● Offers 24/7 ICT and network support to the District Administration and other offices. Ranchi district employs government email for all government offices and utilizes Bharat VC for virtual meetings

● Offers comprehensive technical support during Parliamentary and Legislative Assembly Elections, by managing ECI's ENCORE, ETPBS, Suvidha portals, and LAN infrastructure at counting centres

Important Events Organised

The District Centre conducted virtual launches for numerous programs during various state-level events. Some of them are profiled below:

● Provided ICT support during Hon'ble PM's visit to Ranchi for International Yoga Day and the launch of the Ayushman Bharat Scheme

● VC Support during for Hon'ble Prime Minister rozgar mela at Ministry of Railway, Income Tax Department and CRPF Camp Ranchi

● Provided technical support during Vishwa Adiwasi Diwas 2023, Rajya Sthapna Diwas

Adopting novel ICT tools enabling digital governance is the need of the hour. NIC Ranchi district centre has been crucial in developing ICT projects like the District website in S3WaaS Framework, E-Hospital, Online Election personnel Portal, Aspirational dash-board, m-Karmik mobile App, COVID Chat-Bot, implementation of VR Smart class room and is supporting many other State Government's flagship projects, ICT Services which is pivotal for the District Administration in serving the citizens. Our innovative digital initiatives such VR Smart Lab and various mobile App have improved the participation of citizens, created ease of service delivery, resulting in good governance.

Rahul Kumar Sinha, IAS
Collector & District Magistrate
District Ranchi

Accolades

● Digital Transformation Award 2019 for Aspirational Dashboard Portal for District level initiative

● Letter of Appreciation from District Collector for initiatives during COVID-19 pandemic

● Letter of Appreciation from District Collector for work done in Assembly Bye Election 2023 and General & Assembly Election-2019

● Digital India Week Award 2015 from Hon'ble Union Minister of MeitY, Govt. of India

Way Forward

NIC Ranchi is deeply committed to the transforming dream of Digital India and fostering a culture of e-Governance in the district. With a strong determination, NIC Ranchi actively provides full-fledged ICT support to the District Administration. Its unwavering dedication is aimed at leveraging technology and digital solutions to enhance governance, streamline processes, and improve service delivery.

Contact for more details

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▼ **Fig. 6.1 : VR Smart Class Room at a Government School of Ranchi district**

StarBus*

Integrated Bus Services and Booking Portal

Edited by **RAJEEV JOSHI**

StarBus* is a premier online portal dedicated to enhancing the bus travel experience for both Intra and Inter-State travelers across eight Indian states. It aims to provide a streamlined, user-friendly, and secure platform backed by resilient infrastructure and cutting-edge technology.

With a simple registration, travelers can easily register, plan, reschedule trips, and request refunds for canceled tickets on StarBus*. They can also apply for concessional bus passes, print/view tickets, and access a digital wallet for seamless transactions. Further, they can stay informed with real-time status inquiries and enjoy a range of additional services. However, even without registration, guest users can leverage all the above features.

StarBus* has also streamlined backend operations for State Transport Corporations/Departments, enabling efficient fleet, crew, and inventory management. StarBus* caters to Common Service Centres (CSC), registered agents, and physical counters, facilitating hassle-free cash bookings.

National Informatics Centre (NIC) first successfully introduced StarBus* to the Uttarakhand Transport Corporation (UTC) as a pioneering portal for traveler bus bookings in 2013. Recognizing common challenges across various State Transport Corporations / Departments (STC/Ds), NIC conducted an extensive nationwide study. This study later paved the way for the visionary concept of One

StarBus* streamlines and enhances bus ticketing services across State Transport Corporations/ Departments. This comprehensive platform seamlessly manages the complete ticket life cycle, offering a wide array of functionalities. From initial search and booking to secure payment processing, effortless cancellation and rescheduling options, real-time status tracking, and a robust user feedback mechanism, StarBus* ensures a holistic and user-centric experience. Its intuitive user interface and standardized workflow contribute to operational efficiency, simplifying complex processes while optimizing the overall journey for travelers and transport providers alike.

there are state-level instances dedicated to each specific STC/D. The OIOB StarBus* instance operates within the cloud environment and incorporates web APIs, enabling seamless integration with the individual STC instances. This setup ensures that travelers have access to a unified booking platform across India. When travelers decide to book a ticket, they are redirected to the respective state instance of the

NIC Uttarakhand has been extending excellent support to Uttarakhand Transport Corporation Since 2013. The automation work which was started with just online booking of 6 number of Volvo buses has now been expanded to almost all areas of working of UTC.

We are happy to know that reach of this solution with name StarBus* is expanded to 7 other states. I appreciate the good work done by NIC. I look forward for creation of new synergy between NIC and Uttarakhand Transport Corporation for continued support and effective results.

I wish all the best to NIC in all its endeavor.

Arvind Singh Hyanki
Secretary, Department of Transport
Govt. of Uttarakhand

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Dy. Director General & SIO
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Technical Director
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India One Bus – StarBus* (OIOB – StarBus*), revolutionizing bus travel solutions across the nation.

NIC's approach to implementing the One India One Bus (OIOB) solution involves two integral aspects. The first aspect centres on the establishment of an integrated central portal, which serves as a hub for all STC/Ds to offer their bus-related services to travelers. Simultaneously,

STC, maintaining a localized experience.

The second critical component of StarBus* involves creating individual, state-specific instances for various transport corporations, with integration into the central instance through APIs. These instances are hosted within the respective state's data centres or an alternative data centre if needed.

StarBus* provides a versatile package of

StarBus* Timeline

2013
UTC 1.0
Booking portal for 6 No of Volvo Buses

2015
UTC 2.0
Full Fledged Booking portal

2019
UTC 3.0
Unified Portal Implemented in 2 States & International Service to Nepal

2021
StarBus
Software Product & Implemented in 8 States

2023-24
OIOB
One India One Bus Booking Portal Ready to replicate in entire Country

Features

Web portal
- Search & Book Ticket
- Ticket Cancellation
- Wallet
- Discounts
- Track My Bus
- Rating & Complaints
- Raise Alert
- Instant Refund Status

Mobile Apps
- Pathik for Travellers
- Device Independent ETM APP for Enroute Ticketing, Bus Inspection and Trip Chart
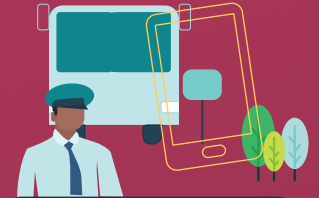- Counter/Agent
- Booking

Agents
- Online/Current Booking
- Trip Chart Generation
- Online Topup
- Real-time revenue Sharing

CSC
- Online Booking
- Online Topup
- Trip Chart Generation

StarBus*
Integrated Bus Services and Booking Portal

Key Components

Fleet Management
Deployment & Management of Bus, & EBTM

Crew Management
Human Resource Management, Duty Allotment & Many more functions

Work Shops, Stores & Inventory
Bus Repair & Workshop Management. Automation of Stores and Inventory Management

Bus Passes
Issuance of QR Code based concessional Passes. Integrated with EBTM

Bus Booking & Cancellations
Online, Current Seat and Charted Bus Bookings. Cancellation & Timely Refund. Many more functions

Integrated Instance
Travellers

OIOB StarBus*

State Instances
- Uttarakhand
- Arunachal
- Sikkim
- Chandigarh
- Andaman & N
- J & K
- Tripura

Travellers

▲ **Fig 8.5: Launch of StarBus* in (a) Chandigarh and (b) Andaman & Nicobar Islands**

functionalities, which can be configured to suit the specific needs and preferences of each state's transport corporation or department. This comprehensive approach aims to streamline and enhance the bus travel experience for both travelers and the organizations managing transportation services.

Features

- **Effortless Booking:** Seamlessly search and book bus journeys based on departure and arrival stations, travel date, and preferred bus service type
- **Secure Transactions:** Ensure safe transactions with a secure payment option, safeguarding your financial information
- **Real-time Bus Information:** Track bus locations in real-time using GPS technology, enhancing your travel experience
- **Self-Service Dashboard:** Empower travelers with a user-friendly self-service dashboard, putting control at your fingertips
- **Bus Pass Management:** Streamline bus pass application, processing, and issuance through an efficient online system
- **Comprehensive Infrastructure Management:** Efficiently manage all aspects of your transport service, including vehicles, workforce, workshops, fuel pumps, booking counters, and authorized agents representing an STC/D
- **Data-Driven Decision Support:** Benefit from insightful dashboards and comprehensive Management Information Systems (MIS) reporting, supported by data interpretation, for informed decision-making
- **Mobile App Convenience:** Access the system conveniently through mobile apps designed for travelers, ticket inspectors, and conductors

Architecture

StarBus* is a cloud-based application boasts a secure three-layer architecture.

- **Application Layer:** Serves as the user interface, catering to travelers, crew members, and management
- **Business Layer:** Houses essential business rules for various services and maintains master data
- **Database Layer:** Ensures the back-end database's integrity with rigorous security measures

Each state operates within a separate instance, maintaining an exclusive and equally secure three-layer architecture tailored to its specific needs.

Technology Stack

- **Front end:** ASP.net
- **Database server:** PostgreSQL
- **Web server:** Microsoft IIS version 8.0 and above.
- **System software:** Operating system Microsoft Windows 2016 R2 or above
- **Mobile application:** Android and iOS

Impact

As of 2022-23, StarBus* has been actively operational across eight Indian states: and union territories viz. Uttarakhand, Arunachal Pradesh, Sikkim, Chandigarh, Andaman & Nicobar Islands, Jammu & Kashmir, and Tripura. Its influence on state bus services is as follows:

- **Digital Payments Promotion:** Embracing digital payment solutions, reducing reliance on cash transactions

- **Paperless Efficiency:** Streamlined workflows and digitized processes reduce paper usage, conserving resources
- **Effortless Resource Management:** Online resource management enhances coordination and real-time information flow
- **Data-Driven Decision-Making:** Actionable insights via Management Information Systems (MIS) reports
- **Standardized Operations:** Ensuring consistency in data, formats, and work methods
- **Strategic Oversight:** Senior STC/D management gains a comprehensive bird's-eye view of operations for informed decision-making

Way Forward

The future of StarBus* focuses on user-centric enhancements, streamlined integration, and STC/D customization.

The team is committed to expanding StarBus*' search functionality, ensuring API connectivity between central and state instances, and optimizing Single Sign-On for enhanced user convenience and security.

In addition, the team intends to adapt StarBus* to STC/D requirements and integrate third-party bus services to enhance the traveler experience and diversify revenue streams. These strategic moves propel StarBus* into a customer-focused and dynamic future.

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Observing
CYBER SECURITY Month

Information Security Tips

October 2023

- Information security is paramount at all times
- Never share passwords
- Inform users about the Information Security Policies
- Keep screen locked and desk cleaned
- Strong passwords, stored in Keeper
- Do not allow use of a private PC/laptop for business purposes
- Classify Information according to its security levels
- Report incidents
- Destroy printed classified documents after use
- Never exchange user data by mail (e.g. data migration)

eSampada

Paving the Way for Transparent Government Housing

Edited by **MOHAN DAS VISWAM**

eSampada, launched on December 25, 2020, is a single online platform that consolidates all services provided by the Directorate of Estates, Ministry of Housing and Urban Affairs, Government of India. It simplifies and standardizes the house allotment process across 40 locations in India, covering properties such as 5 Ashoka Bungalow, Kidwai Nagar Lawn, Vigyan Bhawan, 58 Holiday Homes, and Touring Officers Hostels. The services offered include office and market accommodation allotment, rent generation, and services for Members of Parliament.

This initiative, inaugurated by Shri Hardeep Singh Puri, Hon'ble Minister of Housing and Urban Affairs, alongside senior officials, is aimed at enhancing transparency and accountability while improving the quality of life for Indian citizens. It unifies all Directorate of Estates services onto a single digital platform, aligning with the vision of 'One Nation, One System.'

The eSampada mobile app caters to both iOS and Android users and was developed in-house by the NIC Team of the Ministry of Housing and Urban Affairs. It streamlines processes for different stakeholders, offering role-based workflows. Citizens can now effortlessly register and update their profiles on the eSampada portal, simplifying the application process, ensuring transparency, and saving time, effort, and money.

eSampada also employs role-based workflows, guaranteeing smooth task execution for all stakeholders. Over a span of three years, it transformed the Directorate of Estates by replacing multiple proprietary software-based

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eSamapada is a digital platform offering seamless access to data with controlled permissions for transparency. It eliminates the need for physical presence, reducing travel costs, and simplifies tasks like waitlist generation and rent assessment. This online system enhances citizen experience, saves officials' time, and promotes data-driven decision-making with digital records.

websites with open-source solutions. During this migration, the monolithic database was split into distinct databases interconnected through APIs.

This platform provides users with real-time access to comprehensive service information, introducing transparency and efficiency to the Directorate of Estates, Ministry of Housing and Urban Affairs, ultimately benefiting citizens and stakeholders alike.

General Services

House Allotment

Registered applicants can apply for house allotment in their city of residence. The system allocates houses monthly, and applicants occupy them with CPWD / NBCC assistance. Houses are allotted to waitlisted applicants based on their position in the waiting list for the eligible house.

Retention / Regularisation

Occupants can apply online to retain their house when transferred to an ineligible zone, Jammu & Kashmir UT, or in case of death. Online applications for house regularisation are also ac-

cepted upon retirement or transfer by a family member / spouse for the same house or another house as per entitlement.

License fee Recovery

The monthly license fee of occupants is collected through the PFMS database where it's implemented, or it is uploaded by Drawing and Disbursing Officers where PFMS is not yet in use nationwide.

Vacation of House

Occupants can declare their houses vacant online to CPWD/ NBCC in their respective localities.

Certificate Issuance

Clearance Certificate / No Demand Certificate are issued by Directorate of Estates on request by the occupant by assessing their dues and licence fee received.

Holiday Homes / Guest House Booking

All holiday homes/ Guest Houses are booked online instantly as per the policy of Directorate of Estates across the country.

Venue Booking

Venues for marriage, social gathering etc. are booked online according to policy defined for their allotment.

Generating Provisional Rent Assessment

An occupant can generate provisional rent assessment online as on date.

Services for Directorate of Estates Officials

eSampada also has developed various solutions for Directorate of Estates Officials in order to reduced administrative costs, efforts, time, and paperwork.

Subletting Cases

Formation of team for inspecting Sublet cases and reporting the inspection online

Monthly Rent Bills / No Demand Certificate for Member of Parliaments

Monthly rent bills are generated for Member of Parliaments of Lok Sabha and Rajya Sabha as per the license fee, furniture issued and electrical equipment used.

Litigation Cases

Litigation cases against occupants who overstayed and even after notices do not vacate it are referred for litigation

▲ Fig. 7.1: Shri Hardeep Singh Puri, Hon'ble Minister of Housing and Urban Affairs, along with other senior officials inaugurating eSampada portal and app on the event of Good Governance Day 2020

Governance of market / shops

For management and allotment of shops and ownership rights of markets and ships

Inter pool exchange of houses

Allotment of accommodation according inter-pool exchange policies

Office Space management

Online application of office spaces are applied online from different places where it is available under GPOA (General Pool Office Accommodation). The Office Spaces are allotted as per the requests received online.

Eviction and DRC

The process of eviction of house by Directorate of Estates even after many notices and Recovery of license fee / Damage Charges on overstaying in the house.
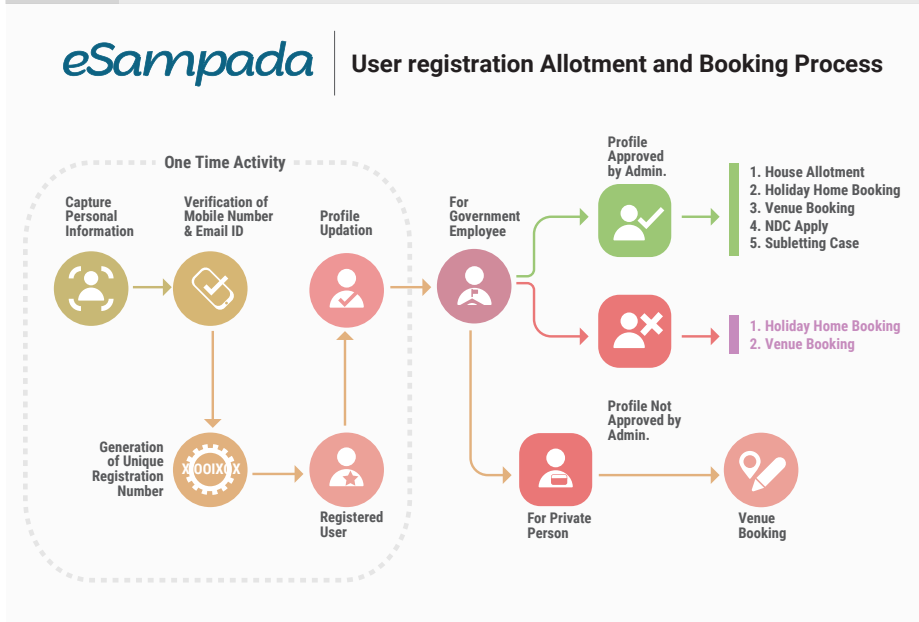
Features

- **Single Sign-On:** Streamlining access for users using Mobile No./ Email id and OTP
- **Personalized dashboards:** Users have personalized dashboards and usage archives
- **Real-Time Fee Status:** Instant updates on license fees and dues for financial management

- **Monitoring and Reporting:** Officials can efficiently view data and generate reports to optimize services and system performance
- **Payment Integration:** eSampada seamlessly Integrates with Bharatkosh for secure online payment transactions with complete transactional data tracking
- **Alert Services:** Integrated SMS and Email alerts keep all users informed and engaged
- **Role-Based Access:** DDOs, Admins, and Directorate of Estates Officials have authorized access based on their roles
- **Document Storage:** Uploaded documents are securely stored in Network Access Storage
- **Two-Factor Authentication:** Ensuring security, users must perform Two-Factor Authentication using OTP and Mobile Number / Email ID
- **Cloud Hosting:** A flexible, secure environment with dynamic resource scaling on-demand
- **Bilingual Support:** Letters generated in both Hindi and English for wider accessibility
- **High Availability:** Implementation of EFM ensures server reliability, even in the face of potential disasters
- **Visual Resources:** Photos and Google Maps available for Holiday Homes and Hostel locations
- **Video Guides:** Accessible tutorials for a comprehensive understanding of system features
- **Complaint Redressal:** A dedicated mechanism for resolving issues and ensuring user satisfaction

▼ Fig 7.2   Services and Solution on eSampada
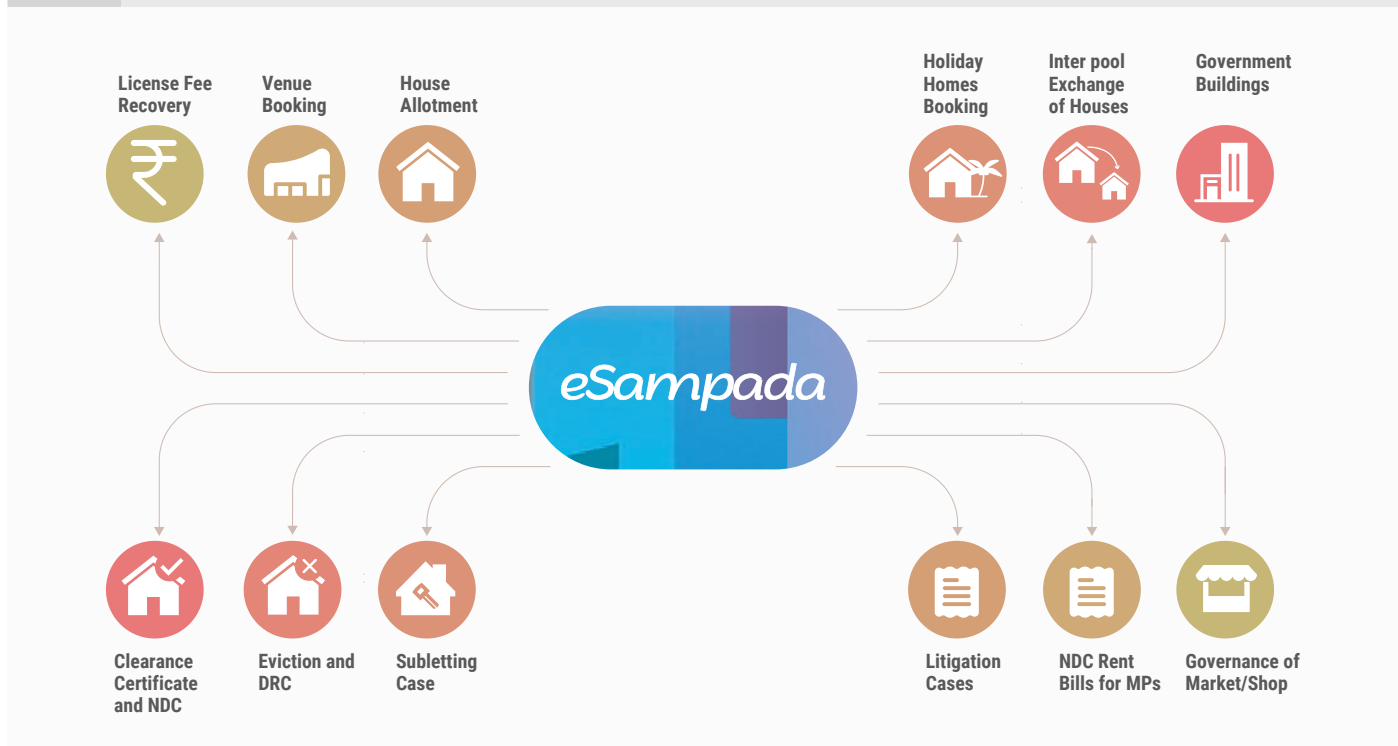
▼ Fig 7.3   User registration along with House Allotment and Booking Process

eSampada | User registration Allotment and Booking Process

eSampada assists in Asset Management for entire Govt. of India Buildings down to room bookings and help in their operations and maintenance for their life cycle till their disposal and is seamlessly integrated with CPWD. It provides management with critical data and reports and is a systematic approach to governance and realisation of value for all asset classes. It boosts productivity for all stakeholders including license fee recovery by all ministries and departments seamlessly for Government accommodations. I appreciate the effort of all officers of NIC for dedicated work to facilitate eSampada for Directorate of Estates, Ministry of Housing and Urban Affairs.

Sharmistha Dasgupta
Dy. Director General, NIC

Technologies Used

eSampada system utilizes open-source technologies: Linux OS, Tomcat Web Server, PostgreSQL database, Java Programming Language, and Spring Boot framework.

The Mobile App is developed with Flutter. Open-source tools like JavaScript, HTML5, CSS3, and Bootstrap ensure scalability, availability, concurrency, reliability, maintainability, and performance.

Key Benefits

Following are the key benefits of the eSampada application:

● **Improved Data Accessibility:** Access data effortlessly anytime, anywhere

● **Transparent Data Control:** Maintains transparency through controlled digital data access permissions for authorized individuals

● **Cost Efficiency:** Achieved significant cost savings by eliminating the need for physical presence, reducing expenses related to travel and in-person interactions

● **Improved Efficiency:** Realizes enhanced efficiency, with reduced effort required for tasks like waitlist generation, checking holiday home availability, rent assessment, and report generation

● **Convenient Online Access:** Diminishes the necessity for physical visits to the Directorate of Estates, providing a more cost-effective approach

● **Time Savings:** Citizens save time as long queues are reduced, and officials can redirect their efforts towards more productive tasks

● **Effective Crowd Management:** Efficiently manages crowds, thereby reducing congestion at the Directorate of Estates, allowing for better attention to critical tasks

● **Enhanced Citizen Experience:** Provides citizens with convenient, time-saving services, significantly enhancing their overall experience

● **Informed Decision-Making:** Utilizes data-driven insights for swift, informed decision-making, leading to improved service quality

● **Accountability and Responsibility:** Establishes greater accountability and promote responsible practices through digital record-keeping

● **Unified Ecosystem:** Fosters seamless interactions between citizens and officials, creating a unified digital environment for better communication

● **Sustainability and Environmental Benefits:** Adopts environmentally friendly practices that reduce paper usage, contributing to sustainability, and saving applicants time and effort

● **Efficient Cloud Hosting:** Eliminates the need for physical hardware, software procurement, on-site space, and maintenance through cloud hosting, resulting in further cost-effectiveness

Way Forward

Future plans encompass the expansion of services, the utilization of advanced analytics, and the enhancement of security measures with ongoing feature enhancements. Additionally, the implementation of an AI / ML-based Chatbot is underway.

Contact for more details

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eSampada | eSampada at a glance

6,31,000
Registered Users

2,93,119
Holiday Home Bookings

1,00,595
Housing Inventory

2,009
Venue Bookings

61,357
House Alloted

Meri Panchayat
m-Governance Platform for Panchayats

Edited by **MOHAN DAS VISWAM**

Over the past few decades, Panchayats have embarked on a digital transformation journey, evolving into professionally managed institutions. The Ministry of Panchayati Raj (MoPR), in collaboration with various Ministries, State Bodies and Agencies, has been working to empower Panchayats and align their efforts with the Sustainable Development Goals by 2030. Throughout this journey, MoPR has introduced several phased initiatives, encompassing a range of online applications and portals aimed at automating and enhancing various Panchayat functions and processes, thereby promoting good governance. This transformation has been further facilitated by the widespread adoption of smartphones and increased internet connectivity in rural areas. As a result, the aspirations of elected representatives, functionaries, and rural residents have been elevated, and there is a growing desire to actively engage with their Panchayats using their smartphones.

In response to these evolving needs, the Meri Panchayat app was launched by the Hon'ble Minister of Rural Development & Panchayati Raj, Shri Giriraj Singh, on 21st August 2023, to provide a platform that empowers citizens to participate actively in their Panchayats' functioning.

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Meri Panchayat mobile app aims to create a unified mobile governance platform for rural areas, including residents, functionaries, and Panchayati Raj Institution System stakeholders. It seeks to streamline and consolidate various functions and information scattered across different portals into one cohesive mobile platform, thus serving the varied needs of Gram Panchayats. Additionally, the mobile app encourages collaboration among stakeholders, cultivating an environment that supports efficient and transparent governance.

At the core of Meri Panchayat's mission is a commitment to Participatory Governance, empowering residents to take an active role in shaping their Panchayat's development plan. Using the platform, residents have the opportunity to suggest projects and activities for inclusion in this plan, with the added feature of being able to upload geo-tagged photos of the proposed work sites. Additionally, residents can engage in reviewing and rating ongoing development projects, promoting transparency and accountability. They can further contribute by providing geo-tagged photos to track the progress of these projects effectively.

In addition, the Meri Panchayat app includes provisions for Social Audit, allowing village residents to monitor the Physical and Financial Progress of projects. They can share quick reviews with geo-tagged photos and videos from work sites, vote on other citizens' reviews, and access lists of beneficiaries of welfare schemes, ultimately contributing to a greater transparency and overall community participation in local governance.

Communication Channels

Meri Panchayat App functions as a comprehensive communication hub that bridges the gap between government officials and residents of Gram Panchayats. It enables key figures, including the Hon'ble Prime Minister, the Hon'ble Minister of Panchayati Raj, and officials at various government levels, to engage with Gram Panchayat residents through notifications, video, audio, and text messages, all facilitated by the app.

Further, Gram Panchayat Sachivs at the grassroots level have the capability to share messages and notifications, including crucial announcements like Gram Sabha Meeting notifications. This communication network is incredibly flexible, allowing alerts, notifications, and messages to seamlessly reach any designated Gram Panchayat, regardless of whether they originate from the National, State, or District level.

Additionally, the app promotes active Citizen-to-Government (C2G) communication by offering channels for residents to provide feedback, suggestions, and complaints. It also empowers citizens to evaluate projects, enabling them to share their perspectives on project quality and expenditure. This, in turn, enhances transparency and accountability in local governance.

Online Services

Meri Panchayat App extends the objective of the Provision of Urban Amenities to Rural Areas (PURA) by enabling rural residents to access services offered by Panchayats. This user-friendly app provides following services:

• Submit complaints with Geo-Tagged and Geo-Fenced photo evidence

• Supports tracking of complaints related to various issues

• Covers concerns such as garbage disposal, cleanliness, street lights, water supply, and more

- Offers payment tracking with search function
- Provides access to Panchayat orders, circulars, acts, and a multimedia information library
- Integrates disaster management and weather forecast alerts

Key Features

Following are the key features of this app:

- **Unified App:** A centralized platform for Panchayat information and services, providing a cohesive experience
- **Integration with MoPR:** Leverages other MoPR applications to provide a wide range of services
- **Enhanced Transparency:** Promotes transparency by making information readily available
- **Public Participation:** Encourages increased public participation, fostering a sense of community involvement
- **Accountability:** Enforces accountability among Panchayat functionaries by facilitating the tracking and monitoring of their actions
- **Social Audit:** Helps in conducting social audits of Panchayats, ensuring that their operations align with expectations of the community
- **Location-Based Services:** Access location-specific information and services, making it easier to find resources and services in local area
- **Local Language Support:** Supports multiple languages, ensuring accessibility for a broader audience
- **Push Notifications:** Real-time updates and notifications related to Panchayats activities
- **Seamless Integration:** Integrates with external systems, allowing data exchange and interoperability with other services
- **Secure Access:** Robust Ensure secure access to the app's functionalities, protecting sensitive data and ensuring the privacy of users

Information Dissemination

The app empowers residents by providing following information

- **One-time Registration:** Access services from any Gram Panchayat with a single registration
- **Elected Representatives:** Access information on Elected representatives, Panchayat officials, and members, promoting transparency
- **Gram Panchayat Profile:** Access Panchayat-level demographic data, infrastructure, and facilities for informed decision-making
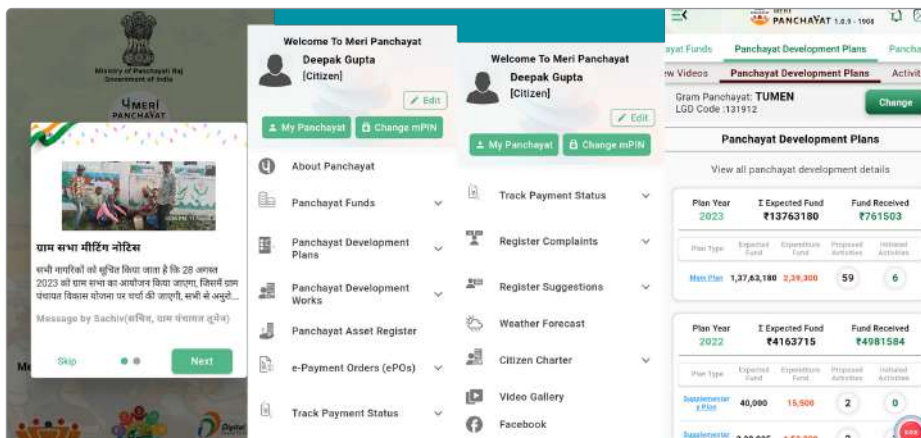- **SDG Resolutions:** Information on resolutions

Fig. 9.1: Meri Panchayat App

taken by Panchayat in alignment with SDGs, highlighting their commitment to local development

- **Asset Register:** Access to the Panchayat's asset register, including information on physical assets

Fig. 9.3: Smt. Sunita Jain, Sr. Technical Director, demonstrating the Meri Panchayat app to Shri Giriraj Singh, Hon'ble Minister of Rural Development & Panchayati Raj during its launch

- **Panchayat Budget:** Details of the Panchayat's budget and its allocation, providing insights into financial resources and priorities
- **Bank Accounts:** Information on the Panchayat's bank accounts and transactions
- **Fund Utilization:** Monitoring of fund utilization, offering transparency and accountability
- **Panchayat Audit Status:** Provides panchayat's audit status, promoting financial accountability
- **Development Works:** Detailed profiles of ongoing and completed projects, including their locations, photos, and expenditure, allowing residents to track progress
- **e-Payment Orders (ePOs):** Track ePOs status - pending, processed, or rejected - with Panchayat / Bank / PFMS for financial transparency
- **Notice Boards:** Access to messages, circulars, and orders issued by the Gram Panchayat, keeping residents informed

Technologies

Meri Panchayat App, built with Flutter, is currently on Android and will soon be available on the Apple Play Store. It seamlessly integrates with various platforms using APIs and web services.

Way Forward

Meri Panchayat App is set to transform governance, empowering rural residents to actively participate in their Panchayats' development. It will serve as a go-to mobile platform for rural residents, promoting interaction and contributions for more effective and inclusive governance.

Fig. 9.2: Through Social Audit, the Panchayat Stakeholders can access to Development Plan, Work Progress, Expenditure, Funds, Reviews, Social Audit, Suggestions, and Complaints

TejasVI
Empowering Data Driven Governance

Edited by **MOHAN DAS VISWAM**

TejasVI transforms data analysis/visualisation for eGovernance through its user-centric design, integrating various data sources, and offering a wide range of visualisations. Notably, its features like predictive analytics, Dashboard Data Question Answering, multilingual dashboards enhance the value proposition for all dashboards developed. By harnessing technology, TejasVI paves the way for more informed and effective eGovernance.

Key Features

TejasVI is not just a data visualisation tool; it is a comprehensive solution that addresses the diverse needs of modern governance. Its robust features redefine how government entities can interact with data and insights.

● **Intuitive Design Interface:** TejasVI boasts a simple drag-and-drop interface that empowers users to craft interactive and powerful dashboards effortlessly, ensuring data analysis is accessible to users of varying technical backgrounds.

● **Integration with External Data Sources:** TejasVI's integration capability extends to various data sources. It accommodates flat files like Excel, CSV,

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TejasVI transforms data analysis / visualisation for eGovernance through its user-centric design, integrating various data sources, and offering a wide range of visualisations. Notably, its features like predictive analytics, Dashboard Data Question Answering, multilingual dashboards enhance the value proposition for all dashboards developed. By harnessing technology, TejasVI paves the way for more informed and effective eGovernance.

JSON, XML, and connects seamlessly with databases such as Microsoft SQL Server, PostgreSQL, MySQL, Oracle, and MongoDB. API integration with RESTful APIs using JSON array requests/responses is also supported.

● **Visualization Charts:** With over 45 default visualisation options, TejasVI enables users to choose from a wide range of chart types. These visuals enhance the clarity and depth of insights derived from data analysis.

● **Seamless Integration with Existing Applications:** TejasVI's API-based integration allows dashboards, pages, and visuals to seamlessly interact with existing applications, ensuring data-driven insights are readily available.

● **Geospatial Insights:** Integration with Bharat Maps, Google Maps, Geo, and World Maps at state and district levels enriches data analysis with location-based insights, enabling governments to make location-centric decisions.

● **Data-Driven Alerts:** TejasVI introduces a data-driven conditional alert feature that proactively notifies users of significant changes or patterns in data. This feature ensures that government entities remain responsive to emerging trends.

● **Advanced Data Preparation:** TejasVI's commitment to data excellence extends to its advanced data preparation features. It offers tools for data quality improvement, joining multiple datasets, and creating custom columns, ensuring that data is not just visualised, but refined for accuracy.

● **Integration with other NIC Products:** With integration with other NIC products like Bharatmaps, Sandes, Parichay, eForms and Collabfiles, TejasVI streamlines data utilisation and analysis, fostering efficiency.

● **Effortless Collaboration:** Dashboards can be easily shared with teams, stakeholders and public via public URL sharing, enabling a more informed and engaged governance process.

● **Online Help Documentation:** Through, online help documentation equips users with the knowledge they need to maximise the platform's potential effectively.

Application Workflow

At the core of TejasVI lies its application workflow, a process that empowers a journey of connectivity, transformation, creativity, and clarity where data evolves into insights that drive informed decisions. It forges the path toward informed decision-making, ensuring that data does not merely remain raw information but evolves into a catalyst for progressive governance.

Data Source Connectivity: TejasVI journey commences with data source connectivity. The platform effortlessly connects with various data sources, including flat files, databases, and APIs.

Visual Representation: TejasVI provides users with a visual paradise, offering over 45 types of visuals and HTML components to choose from, allowing them to best convey their insights.

Tailored Customization: TejasVI offers unparalleled customization, with over 100 properties per visual, allowing users to fine-tune elements to perfection for each unique dataset.

Dashboard Creation: TejasVI revolutionizes dash-

▲ Fig 10.1   TejasVI's Application Workflow

board creation with a seamless drag-and-drop interface for intuitive visual arrangement.

Technology Stack

TejasVI's potential lies not only in its features but also in its architecture and the advanced technology that underpins its functionality.

● **Frontend:** Angular, React Framework for building intuitive web interfaces.

● **Middleware:** Spring Boot, Flask for creating scalable and modular backend services.

● **Backend:** PostgreSQL for efficient data storage and retrieval.

● **Analytics:** Custom-built visualisation engines for creating interactive dashboards and charts.

● **Other Tools:** Docker-compose or Kubernetes for efficient deployment and scalability.

Key Innovations Applied

● **Microservices:** TejasVI uses microservices for efficient resource use. Each microservice operates independently, making updates easy and adapting to evolving data needs.

● **Docker:** TejasVI utilizes Docker containers for streamlined deployment, ensuring compatibility and reducing conflicts, enhancing flexibility and portability.

● **Multi-Layered Caching:** TejasVI employs multi-layered caching, including Hazelcast, to accelerate data retrieval by storing frequently accessed data in memory. This boosts performance and provides real-time insights even under heavy workloads.

● **Integration with external data sources:** It accommodates a range of data formats, from flat files to various databases and APIs.

● **Integration with emerging technologies:** AI-driven analytics in TejasVI enables government entities to anticipate trends and make smarter decisions, aligning with the future of data-driven governance.

Impact

TejasVI empowers governments and stakeholders with data-driven decisions, benefiting various sectors across states and user departments.

2023 Highlights:

● **Deployments:** In 2023, TejasVI expanded its reach to over 20 states and user departments.

● **User Base:** TejasVI's portal and dashboards saw engagement from 128,000+ users.

● **User Interaction:** Logged 1.3 million users interactions, demonstrating its utilization and impact.

Award

TejasVI has been conferred upon the Award of Recognition by CSI SIG eGovernance Awards 2022 under the Project Category.
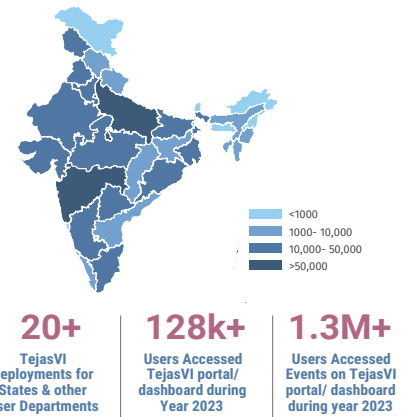
Way Forward

● **Empowering Predictive Analytics with Time Series Forecasting:** TejasVI's commitment to data-driven decision-making extends beyond visualising historical data. The platform now embraces predictive analytics with its time series forecasting feature. By analysing historical trends, TejasVI can provide projections and forecasts, empowering government entities to anticipate future patterns. This predictive prowess equips decision-makers with the insights needed to proactively address challenges and capitalise on emerging opportunities.

● **Unlocking Insights with Dashboard Data Question Answering:** Recognizing that insights are only

as valuable as the questions they answer, TejasVI introduces the Dashboard Data Question Answering feature. Users can now directly query their dashboard data and receive instant responses. This interactive functionality not only expedites data exploration but also enhances user engagement by facilitating quick and targeted information retrieval. The integration of natural language processing capabilities transforms TejasVI into a responsive data analysis partner.

● **Bridging Language Barriers with Multilingual Dashboards:** Recognizing the significance of linguistic diversity, with the integration of NIC PaniniAI translation, TejasVI dashboards are multilingual enabled.

These additions enhance TejasVI's ability to

▼ Fig 10.3   Statewise Usage Events

	<1000
	1000- 10,000
	10,000- 50,000
	>50,000

20+
TejasVI deployments for States & other User Departments

128k+
Users Accessed TejasVI portal/ dashboard during Year 2023

1.3M+
Users Accessed Events on TejasVI portal/ dashboard during year 2023

empower data-driven governance, offering actionable insights from historical and predictive analysis, as well as interactive querying. TejasVI continues to lead in technological innovation, bridging the gap between data and impactful decision-making.

In the age of exponential data growth, TejasVI leads the way in technology-driven governance. Its microservices, Docker integration, and multi-layered caching showcase the fusion of technology and governance. TejasVI propels government entities beyond data analysis, forging a future where insights drive tangible societal improvements. It reflects India's commitment to technology as a force for positive change. TejasVI's journey continues with a vision for the future, integrating emerging technologies like AI and ML to anticipate trends, optimize resources, and proactively address societal challenges.

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▼ Fig 10.2   TejasVI's software architecture
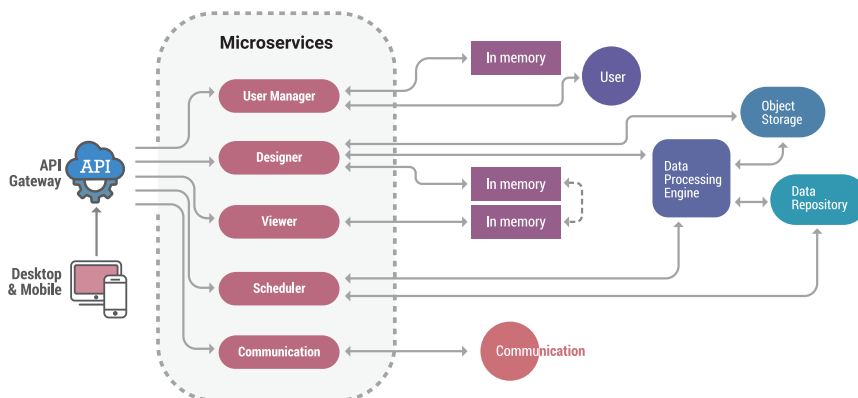
Advanced Persistent Threats
Threat Landscape and Countermeasure

Edited by **MOHAN DAS VISWAM**

In today's interconnected digital world, where technology has seamlessly integrated into every aspect of our lives, a looming threat emerges – Advanced Persistent Threats (APTs). These highly sophisticated and persistent cyberattacks have become a pressing concern, urging both organisations and individuals to strengthen their defences. In this article, we embark on a journey to unveil the intricate layers of APTs, their tactics, and the vital measures needed to counter their stealthy incursions.

Exploring the APT Landscape

At its core, an Advanced Persistent Threat (APT) refers to a meticulously orchestrated cyberattack campaign where intruders establish a clandestine, long-term presence within a network. These attacks are not random; they are strategically planned and meticulously researched. The primary targets often include large enterprises or government networks, and the consequences of such intrusions are far-reaching.

- **Intellectual Property Theft:** APTs frequently aim to pilfer trade secrets, patents, and proprietary information
- **Compromised Sensitive Information:** Employee and user private data are prime targets, leading to severe privacy breaches

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In the digital age, Advanced Persistent Threats (APTs) pose a persistent and evolving menace. APTs, orchestrated by adept adversaries, demand advanced defense strategies, including cutting-edge detection tools, network segmentation, vigilant monitoring, employee education, regular updates, endpoint security, incident response planning, and informed threat intelligence. By embracing these measures, we can fortify our digital realm against Advanced Persistent Threat's stealthy advances.

- **Sabotage of Critical Infrastructures:** APTs can disrupt and even destroy essential organizational systems, such as database deletion, causing significant disruptions
- **Total Site Takeovers:** In some instances, attackers gain complete control over a victim's digital presence, posing a grave threat

Executing an APT assault demands substantial resources, including skilled cybercriminal teams with significant financial backing. Some APT attacks are even state-sponsored, used as potent weapons in the realm of cyber warfare.

APTs vs. Traditional Cyber Threats

APTs differ significantly from conventional web application attacks in several key ways:

- **Complexity:** APTs are notably more complex and sophisticated in their execution
- **Persistence:** Unlike hit-and-run attacks, APTs maintain a long-term presence within compromised networks to gather extensive information
- **Manual Execution:** APTs are manually executed against specific targets, contrasting with automated attacks launched indiscriminately
- **Network-Wide Infiltration:** APTs aim to infiltrate entire networks, not just isolated segments

APT Progression

A successful APT attack unfolds in three distinct stages: network infiltration, expansion of the attacker's presence, and the extraction of amassed data—all while avoiding detection

- **Stage 1 – Infiltration:** Enterprises typically fall victim to infiltration through one of three attack surfaces: web assets, network resources, or authorized human users. Attackers achieve this through malicious uploads (e.g., Request for Information (RFI), SQL injection) or social engineering attacks like spear phishing. Simultaneously, attackers may execute Distributed Denial of Service (DDoS) attacks to serve as both a diversion and a means to weaken the security perimeter. Once initial access is gained, attackers swiftly install a backdoor shell, enabling remote, stealthy operations within the network.
- **Stage 2 – Expansion:** After establishing a foothold, attackers aim to broaden their presence within the network. This entails compromising individuals higher up in the organization who have access to critical data. Attackers collect vital information, including product details, employee records, and financial data. Depending on their goals, attackers may sell the stolen data, manipulate it to sabotage the organization, or orchestrate a complete takedown. If sabotage is the objective, attackers subtly gain control over critical functions and manipulate them sequentially for maximum damage.

- **Stage 3 – Extraction:** During an APT operation, stolen data is securely stored within the victim's network. Once a sufficient volume of data is amassed, the attackers must extract it without detection. White noise tactics, such as DDoS attacks, are commonly employed to distract security personnel and weaken defenses.

APT Security Measures

Guarding against APTs necessitates a multifaceted approach that acknowledges their complexity:

- **Advanced Detection Mechanisms**: Organisations must deploy cutting-edge threat detection tools capable of identifying unusual patterns, abnormal behaviour, or recognizable APT indicators. These tools surpass traditional signature-based defences, employing artificial intelligence and machine learning to spot suspicious activities.

- **Segmented Networks**: A critical defence strategy involves dividing the network into distinct segments or zones. This approach limits lateral movement, isolating critical components from potential APT infiltration. Even if attackers breach one segment, moving laterally within the network becomes challenging, minimising potential damage.

- **Continuous Vigilance**: Constantly monitoring network activities is paramount. Organisations should meticulously scrutinise log data, network traffic, and system behaviour to detect any signs of suspicious actions. Early detection can significantly reduce the impact of an APT attack.

- **Empowering Through Education**: Human factor remains a vulnerable entry point. Organisations should invest in cybersecurity training and awareness programs to equip employees with the knowledge and skills to identify APT-related hazards. Vigilant and informed employees serve as an additional layer of defence.

- **Patching Vulnerabilities**: Software and system vulnerabilities are prime targets for APT actors. Regularly updating and patching these vulnerabilities minimises potential entry points. Organisations should also proactively conduct vulnerability assessments and penetration testing to address weaknesses.

- **Guarding Endpoints**: Endpoints, such as individual devices like laptops, desktops, and mobile devices, are often the initial targets of APT-related threats. Organisations must deploy advanced endpoint security solutions that utilise techniques like behaviour analysis and machine learning to detect and counter APT-related threats at the device level.

- **Battle-Tested Strategies**: Preparing for an APT attack involves developing a comprehensive incident response plan. This plan should outline the steps to be taken in the event of an APT breach, enabling swift identification, containment, and mitigation of the attack. Regularly testing this plan through simulated exercises ensures organisation preparedness.

- **Informed Preparedness**: Staying informed about evolving APT threats is essential. Organisations should actively engage with threat intelligence sources to gain insights into the latest APT tactics, techniques, and procedures. This intelligence can help in informed defence strategies and adapt to emerging threats.

Conclusion

In our tech-driven era, APT threats evolve relentlessly, demanding a proactive, informed stance. By grasping APT intricacies and embracing robust defense strategies, we safeguard our digital presence. With knowledge and tools, we stay resilient amid evolving APT challenges. In this uncertain time, vigilance, adaptability, and cybersecurity commitment are our shields against shadowy threats.

Guarding Against **Advanced Persistent Threats**

- Advanced Detection Mechanisms
- Informed Preparedness
- Segmented Networks
- Plugging the Gaps
- Eternal Vigilance
- Battle-Tested Strategies
- Empowering through Education
- Guarding Endpoints

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Emerging AI/ML
Attacks and Risks

Navigating Emerging AI/ML Threats in Application Security

Edited by **MOHAN DAS VISWAM**

In the relentless pursuit of innovation, applications are harnessing the remarkable capabilities of Artificial Intelligence (AI) and Machine Learning (ML). These technologies promise transformative advances, from intelligent recommendation systems and chatbots for precise data analysis. But these systems can also introduce vulnerabilities that can be exploited by malicious actors. As AI and ML become indispensable in our digital ecosystem, understanding the risks and attacks they can be used for is pivotal. This article embarks on a journey through the intricacies of these evolving risks, unveiling the mechanisms behind AI/ML-related vulnerabilities. By understanding these, organizations can fortify their defenses, ensuring that the promise of AI/ML technology is embraced while guarding against its potential perils

Emerging AI/ML Threats and Risks

As AI and ML continue to permeate various sectors, they also bring forth a range of new cybersecurity threats and attacks that must be addressed to protect application security and cybersecurity as a whole. Here, we outline some of the prominent AI/ML-related threats and attacks and provide insights into strategies to mitigate them.

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In the era of relentless innovation driven by Artificial Intelligence (AI) and Machine Learning (ML), applications are gaining remarkable capabilities. From intelligent chatbots to precise data analysis, these technologies hold immense promise. However, they also bring vulnerabilities that malicious actors can exploit. Understanding these threats is crucial for organizations to fortify their defenses and embrace the potential of AI/ML while safeguarding against potential perils. The convergence of security and innovation is shaping the future of application security.

Data Poisoning

Data poisoning is a stealthy attack that involves altering the training data fed into AI models. This manipulation can subtly skew the model's understanding, resulting in incorrect predictions or classifications. For instance, malicious actors could poison the data used to train medical diagnosis AI systems, leading to erroneous disease diagnoses and potentially severe consequences.

Mitigation strategies for data poisoning include rigorous data validation and anomaly detection mechanisms to identify and exclude tainted data during model training.

Adversarial Attacks

Adversarial attacks are a significant concern, where manipulated data is injected into AI systems to manipulate their outcomes, leading to misclassification or incorrect predictions. These attacks can be performed by insiders or external attackers. (See Figure 2) For example, a self-driving car can misinterpret a stop sign for a speed limit sign due to subtle alterations in the visual data.

Mitigating adversarial attacks requires developing robust anomaly detection systems and continually updating AI models to adapt to evolving threat.

Evasion of Detection Systems

In Evasion of Detection Systems attackers identify blind spots in the system and exploit them to evade detection. A simple diagram of evasion of detection is shown in Figure 3. Here the attacker modifies the input data to trick the model into not detecting something it should detect, for example, a security system not detecting malware due to clever modification of the malware's data and code. It may seem identical to adversarial but they differ in objectives and the process by which it achieves them. An attacker manipulating malware / virus / trojan to avoid recognition by an AI-based antivirus program is an example of an evasion of detection attack.

In order to mitigate such attacks, organizations should regularly evaluate and update their detection mechanisms.

AI-Generated Payloads

Malicious actors can leverage AI/ML techniques to generate attack payloads that evade traditional defenses. An example is shown in Figure 4 where an attacker trains an AI/ML model to generate phishing emails by providing

Data Poisoning

Adversarial Attack

AI Generated Payload

Evasion of Detection

Extraction Attacks
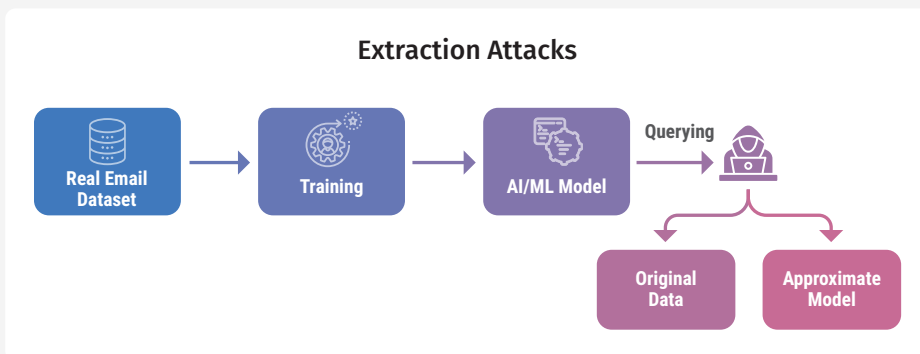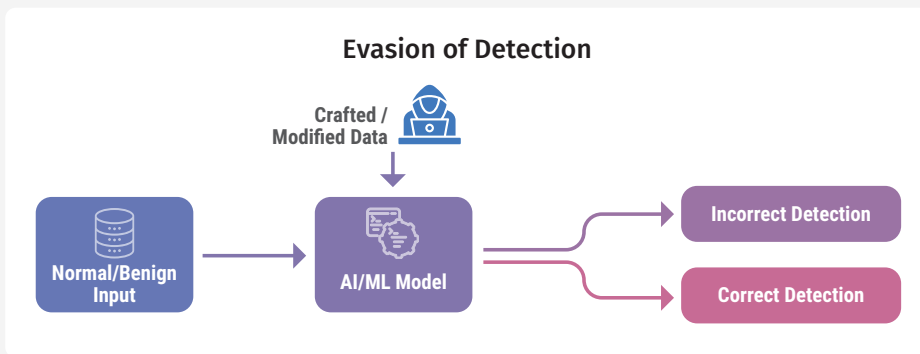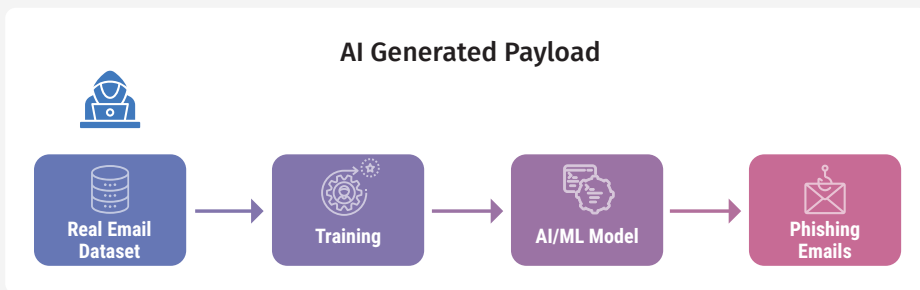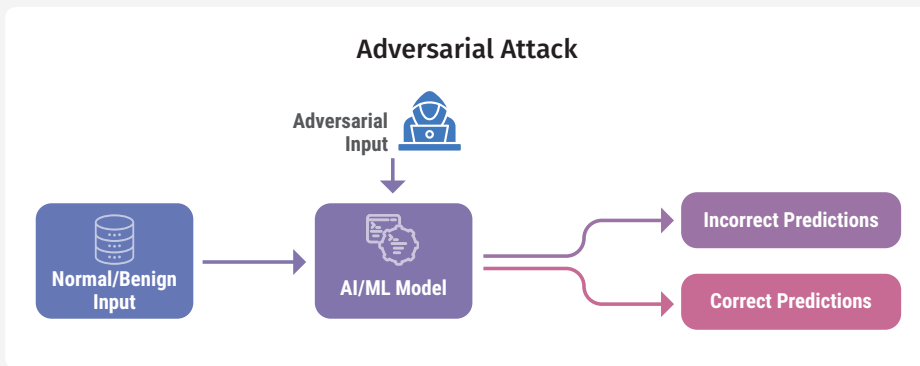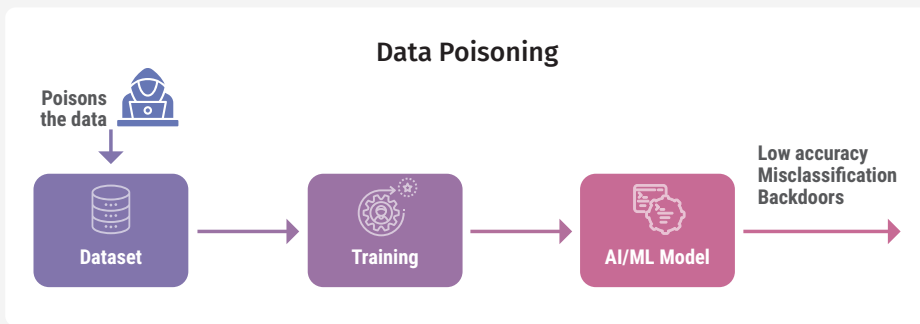
real email communications as the dataset. The phishing emails generated by this model will mimic genuine communication, increasing the likelihood of successful phishing attacks.

To counter AI-generated payloads, organizations need to enhance email filtering systems with AI-driven anomaly detection to identify and block such malicious messages.

AI Enhanced social engineering

Attackers leverage AI-driven insights to craft highly personalized and convincing social engineering attacks, increasing the likelihood of successful phishing or impersonation attacks. For example, Attackers use AI to analyze a target's social media activity and preferences to craft tailored phishing emails that appear more convincing.

Mitigating AI-enhanced social engineering attacks necessitates user education, multi-factor authentication, and advanced behavior analytics to identify suspicious activities.

Extraction Attacks

Attackers employ AI/ML methods to extract sensitive data or confidential information from AI models or datasets. An illustration of the extraction attack is shown in Figure 5. The attacker queries the AI model providing inputs, and from the responses of the models, the attacker can reconstruct the original data set used for training the model or create an approximate model. For instance, attackers can use machine learning algorithms to reverse engineer proprietary algorithms or extract personal information from a machine learning model.

Protecting against extraction attacks involves implementing robust access controls, encryption, and monitoring mechanisms to safeguard sensitive data and model outputs.

Conclusion

In conclusion, while the integration of AI and ML in applications empowers innovation, it also introduces new security challenges. Recognizing and mitigating these emerging threats is imperative. With vigilant understanding and proactive defenses, organizations can harness the transformative potential of AI/ML while safeguarding their digital landscapes.

As technology evolves, the synergy between security and innovation becomes paramount, shaping the future of application security. It is essential for organizations to stay ahead of these AI/ML-related risks and continuously adapt their cybersecurity strategies to defend against evolving threats.

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Appscape

Mobile technology has emerged as a primary tool for governments to serve their citizens. It has bypassed the need for traditional physical networks for communications and collaborations. It is also much more affordable and accessible, thus strengthening the nation through better citizen-government interaction. To further nourish this interactivity, NIC has created a repository of more than 730 mobile apps available through both the Android and iOS platforms. This issue of Appscape covers some of the more popular mobile apps launched recently. These apps belong to different sectors such as Administration, Development, Finance, Public Distribution, Health and Education.

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SAROKAR

SAROKAR is an all-comprehensive platform for reporting issues linked to communicable diseases. It swiftly routes complaints to the appropriate Frontline Workers by location, ensuring prompt resolution. The app has two core modules:

- Citizen module empowers citizens to report concerns regarding sanitation or communicable diseases. Users are guided to specify the complaint's location, along with photographic evidence, if available, to complete the submission process.

- Officer Module encompasses three vital roles:

  1. EO / BDO (Executive Officer / Block Development Officer): Complaints go through the EO / BDO Dashboard, where they are assigned to an ADO for inspection. If compliant done, they are forwarded to the DM / CDO.

  2. ADO: ADO inspects complaints, guided by GPS for precise navigation. They document the process, including photographs.

  3. DM / CDO: They monitor complaints, their statuses, including pending, resolved, and overdue ones. Visual evidence allows a thorough assessment.

  By providing a clear mechanism, SAROKAR aims for a healthier and safer community by promptly addressing concerns and preventing the spread of communicable diseases.

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PCTS Rajasthan

PCTS App extends the Pregnancy, Child Tracking & Health Services Management System used by Rajasthan's Health Department. It manages data for over 16,700 health institutions. It empowers Auxiliary Nurse Midwives by capturing data at the source. Its key features include:

- Real-time pregnancy progress tracking
- Tailored monitoring to reduce maternal and infant mortality
- Improved health surveillance
- Enhanced vaccination program oversight for child health
- Identifying sterilization candidates for population control
- Monitoring sex ratios at birth by area and district
- Automated alerts for immunization dropouts
- Online health institution directory
- Strategic infrastructure planning
- Concise reports for health institutions, including vaccine inventory

This app is advancing healthcare management and informed decision-making, thus positively impacting maternal and child health outcomes in the state.

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ULLAS

ULLAS, which stands for "Understanding Lifelong Learning for All in Society," is a transformative force with a mission to bridge educational disparities. It aims to re-engage 1.2 million drop-out students and those excluded from formal education, guiding them back into the world of learning.

At its core, ULLAS advances adult education and literacy nationwide. It offers fundamental education, digital proficiency, financial literacy, and life skills to individuals aged 15 and above. It provides an accessible and interactive platform for self-paced learning.

One of its standout feature is its reliance on volunteerism. It encourages volunteers to participate, fostering a culture of lifelong learning and knowledge-sharing. This collaborative approach ensures universal education accessibility.

ULLAS serves as a virtual gateway to learning, aligned with the Government of India's New India Literacy Programme (2022-2027) and the National Education Policy 2020. It offers access to a diverse range of educational materials via the NCERT's DIKSHA portal, breaking down traditional learning barriers.

ULLAS goes beyond academics, emphasizing essential life skills, including financial and legal literacy. By imparting these competencies, ULLAS prepares individuals for active societal and economic participation.

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SPARK Kerala

In the heart of Kerala's administrative overhaul lies the Service and Payroll Administrative Repository (SPARK), a dynamic system that modernizes personnel, payroll, and accounts management for government employees. Designed for transparency, efficiency, and uniformity, SPARK introduces Permanent Employee Numbers (PENs) to streamline access to employee data and bolster rule adherence.

Taking this innovation a step further, the SPARK OnMobile app was launched. This mobile app offers a suite of user-friendly features, ensuring hassle-free administrative access. Its key features include:

- Employees can effortlessly access their salary details, fostering transparency and financial planning.
- Streamlined leave applications and status tracking empower employees to manage their time off effectively.
- Seeking permissions for external duties is now straightforward, promoting swift approvals.
- Simplifies applying for compensatory time off, aiding work-life balance

SPARK OnMobile aims to boost employee engagement, by giving employees direct control over administrative tasks and reducing bureaucratic hurdles. This not only increases employee satisfaction but also enhances overall efficiency.

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Vidyanjali

Vidyanjali combines Sanskrit words "Vidya" (knowledge) and "Anjali" (offering with both hands), symbolizing the wholehearted sharing of knowledge.

The app aims strengthens schools through community and private sector involvement. Its core goal is to create a symbiotic relationship between schools and volunteers, enhancing the educational experience for students.

It connects schools with diverse volunteers from various backgrounds, including professionals, retirees, NGOs, and more.

Vidyanjali impacts education in following ways:

- Volunteers bring expertise into classrooms, offering holistic learning.
- Volunteers mentor students, fostering empowerment and motivation.
- Creates an ideal learning environment.
- Promotes collective responsibility for nurturing the future generation.

Vidyanjali aligns with India's educational goals, elevating quality, fostering collaborative learning, and driving positive change in schools nationwide.

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Dirghayu

Dirghayu is a dedicated mobile app offered by Central Pension Accounting Office (CPAO) to simplify pensioners' access to various services.

To register on the app, users need to provide their Pension Payment Order (PPO) number, Date of Birth, and Date of Retirement (or Date of Death for family pensioners). This user-friendly app offers a range of beneficial features, including:

- Users can access vital pension details such as Basic Pension, Number of Revisions, Recent Payment Amount, and Last Updated Life Certificate Date.
- Where applicable, app presents the details of the latest 24 payment / transaction records associated with a specific pensioner.
- Offers a comprehensive listing of all SSAs issued to a specific pensioner and it can be easily downloaded in PDF format.
- Pensioners have the capability to view a chronological list of all previously registered help requests and ascertain their respective statuses.
- Pensioners can conveniently access and review the details of their latest submitted life certificate.

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One Map Greater Noida

Greater Noida is transforming into a metropolitan hub, aiming to decongest Delhi by attracting economic activities and residents. Established in 1991 under the UP Industrial Area Development Act, it aspires to create an efficient modern city. The Greater Noida Industrial Development Authority (GNIDA) governs this transformation, overseeing planning, development, and operations. Central to this transformation is OneMap, integrating GIS technology into GNIDA's decision-making. It enhances transparency, monitoring, and accountability by providing geospatial insights for informed decisions, fostering a culture of responsibility within governance. Its key features are

- Interactive dashboard
- Centralized spatial data repository
- Large-scale basemap generated via drone surveys
- Utility data integration
- Consumer complaint mechanism
- Waste vehicle tracking
- Plot layouts with MIS data
- Platform integration for initiatives like Swachh Bharat and O&M endeavors.

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Hon'ble President of India Launches Redeveloped Website and Releases E-Book to Chronicle One Year in Office

In a momentous event, the Hon'ble President of India, Smt. Droupadi Murmu, marked a significant stride towards modernization and transparency by launching the redeveloped websites of the President of India and Rashtrapati Bhavan. The launch ceremony, graced by the presence of the Secretary to the President, Director General of the National Informatics Centre (NIC), and other high-ranking officials from Rashtrapati Bhavan and NIC, signifies a noteworthy step in the digital evolution of India's highest office.

The revamped websites, www.presidentofindia.gov.in and www.rashtrapatibhavan.gov.in, were unveiled in a ceremony that underscored the commitment of the Rashtrapati Bhavan to enhance its digital presence and engage with the public more effectively. The President emphasized the importance of modernizing the digital infrastructure of the office to provide citizens with easy access to information, services, and updates related to the President's activities and initiatives.

Speaking on the occasion, the Hon'ble President of India highlighted the significance of a robust online presence, stating, "In this digital age, it is essential for the President's office to maintain a dynamic online presence that fosters greater transparency and accessibility. These websites will serve as a vital platform to showcase the work and contributions of the Rashtrapati Bhavan to the nation."

The redeveloped websites feature user-friendly interfaces, improved navigation, and comprehensive content that includes historical information, speeches, press releases, and updates on the President's engagements. The websites are also designed to be mobile-responsive, ensuring that citizens can access information on various devices.

Further, the Hon'ble President released an e-book titled "A Year in Re-

Hon'ble President of India, Smt. Droupadi Murmu, launching redeveloped websites for President of India and Rashtrapati Bhawan alongside release of an e-Book in presence of Secretary to the Hon'ble President and other higher officials

view: Reflections from Rashtrapati Bhavan." This compilation offers a collection of highlights of the President's various initiatives, engagements, and interactions during her tenure. It captures the essence of the President's vision and her commitment to various social causes, including healthcare and social welfare.

These launches mark a pivotal moment in Rashtrapati Bhavan's digital transformation, enhancing accessibility, communication, and transparency. The Hon'ble President encourages citizens to engage with Rashtrapati Bhavan through its digital platforms.

- Informatics News Desk, NIC-HQ

Hon'ble President of India dedicates PARV to simplify Plant Variety Registration

On September 12, 2023, during the 'First Global Symposium on Farmers' Rights,' Hon'ble President of India, Smt. Droupadi Murmu, unveiled PARV (Portal to Apply for Registration of Plant Varieties). This user-friendly portal was meticulously designed and developed by the Agricultural Informatics Division of NIC Delhi for the 'Protection of Plant Varieties and Farmers' Right Authority,' a part of the Ministry of Agriculture & Farmers' Welfare.

The launch of PARV took place during the inaugural ceremony of the 'First Global Symposium on Farmers' Rights,' organized by the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), FAO, Rome, and hosted by the Ministry of Agriculture & Farmers' Welfare, Government of India. The event unfolded on September 12, 2023, at the ICAR Convention Centre, NASC Complex, PUSA, New Delhi, and saw the presence of several dignitaries.

Hon'ble Union Minister for Agriculture and Farmers' Welfare, Shri Narendra Singh Tomar, and Hon'ble Minister of State for Agriculture & Farmers Welfare, Shri Kailash Choudhary, graced the occasion. Also present were MoA&FW Shri Manoj Ahuja, Secretary DoA&FW, Shri T. Mohapatra, Chairperson PPVFRA, Shri Kent Nnadozie, MoA&FW Secretary ITPGRFA Rome, Dr. H. Pathak, Secretary DARE & DG, ICAR and other senior officers.

PARV, available at https://app.plantauthority.gov.in, is a web-based application tailored to receive and process applications for registering new plant varieties. It caters to a wide range of stakeholders, including farmers, traditional communities, public and private seed industry players, state agriculture universities, and institutions from the Indian Council of Agricultural Research (ICAR), CSIR, MoEF, among others.

The President of India, Smt Droupadi Murmu inaugurating the First Global Symposium on Farmers' Rights in New Delhi

The online application process is designed to be hassle-free and efficient. It allows for supporting attachments and photographs and integrates seamlessly with department workflows, minimizing paperwork. Additionally, the portal offers features like online certificate generation, automatic generation of the Plant Variety Journal, a dashboard for monitoring, MIS reports, online application status tracking, and alerts through email and SMS.

PARV signifies a significant leap towards simplifying and modernizing the registration of plant varieties, aligning with the evolving needs of agriculture and plant protection. It brings convenience and efficiency to stakeholders while contributing to the promotion of sustainable agriculture and the protection of farmers' rights.

- Shailendra Saxena, NIC-HQ

Hon'ble Chief Minister of Uttar Pradesh Launches CM DARPAN Dashboard for Data Driven Governance

In a significant stride towards enhancing transparency and efficiency in governance, the Hon'ble Chief Minister of Uttar Pradesh, Mahant Yogi Adityanath, inaugurated the 'CM DARPAN Dashboard.' The event was also attended by the Hon'ble Deputy Chief Ministers of Uttar Pradesh, Shri Keshav Prasad Maurya and Shri Brajesh Pathak alongside other higher State and NIC officials. This innovative initiative, powered by NIC, is poised to revolutionize the way government data is collected, processed, and disseminated. The 'CM DARPAN Dashboard' is designed to transform complex government data into compelling visuals, making it more accessible and comprehensible for both policymakers and the public.

CM DARPAN stands for "Chief Minister's Digital Analytical and Reforms Program for Actionable Insights." It is a comprehensive data analytics platform developed which provides a unified view of data from various government departments and agencies. The platform utilizes cutting-edge technology to convert vast and intricate datasets into user-friendly visualizations, which can be accessed through a secure and user-friendly dashboard.

The CM DARPAN Dashboard brings several tangible benefits to the table. It improves decision-making, efficiency and transparency by providing policymakers with real-time, data-driven insights, enabling more informed choices. It further serves as a valuable tool for engaging citizens by providing them with a clear view of the government's performance. Moreover, thanks to real-time monitoring and predictive analytics, it enables early detection of potential issues, allowing for timely interventions.

The launch of the 'CM DARPAN Dashboard' is a testament to the Uttar

Hon'ble Chief Minister of Uttar Pradesh, Mahant Yogi Adityanath, launching CM DARPAN Dashboard in the presence of Deputy Chief Ministers of Uttar Pradesh, Shri Keshav Prasad Maurya and Shri Brajesh Pathak, at Lucknow

Pradesh government's commitment to leveraging technology for the welfare of its citizens. It marks a significant step forward in the journey towards good governance, where data is at the heart of decision-making, accountability, and public engagement.

As this innovative platform is adopted and integrated further into the state's governance framework, it is expected to evolve and expand its capabilities. The 'CM DARPAN Dashboard' could serve as a model for other states in India and even other countries looking to enhance their governance through data-driven insights.

– Vandana Singh, Uttar Pradesh

Hon'ble Union Minister Shri Narendra Singh Tomar dedicates PM Kisan mobile app with face authentication feature to the nation

On June 22, 2023, in New Delhi, the Hon'ble Minister of Agriculture and Farmers Welfare, Shri Narendra Singh Tomar, marked a significant milestone by launching the PM-Kisan mobile app, developed by the National Informatics Centre (NIC). This app is an integral part of the ambitious "Pradhan Mantri Kisan Samman Nidhi" scheme, aimed at providing essential income assistance to farmers across India. What sets this app apart is its incorporation of a cutting-edge face authentication feature, which allows farmers to complete their e-KYC remotely, without the need for OTPs or fingerprints, from the comfort of their homes.

The PM-Kisan scheme is one of the largest direct benefit transfer (DBT) initiatives globally. Under this scheme, farmers receive an annual sum of Rs. 6,000 directly deposited into their bank accounts in three instalments, linked to their Aadhaar. This monumental program has disbursed over Rs. 2.42 lakh crore to the bank accounts of more than 11 crore farmers, including over 3 crore women. Even during the challenging times of the COVID-19 lockdown, PM-Kisan proved to be a steadfast companion for farmers.

The newly launched PM-Kisan Mobile app is a user-friendly tool, readily available for download on the Google Play Store. Beyond income assistance, the app serves as an information hub for farmers, offering essential details related to the scheme and their PM-Kisan accounts. One notable module is the "Know Your Status" feature, allowing farmers to access their land records, check Aadhaar linking status with their bank accounts, and review the progress of their e-KYC.

Speaking at the launch event, Union Minister Shri Tomar highlighted the revolutionary nature of the PM-Kisan scheme. It eliminates intermediaries, allowing the Central Government to directly provide benefits to farmers on

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an unprecedented scale through the use of technology. The successful implementation of this scheme is a remarkable achievement, streamlining the entire process through a user-friendly mobile app.

The launch event witnessed the presence of prominent dignitaries, including the Hon'ble Minister of State, Shri Kailash Choudhary, the Secretary of the Ministry of Agriculture and Farmers Welfare, Shri. Manoj Ahuja, and senior officials from the farmers' welfare division, NIC HOG & DDG Mrs. Pratibha Lokhande, HOD & DDG Mrs. Mala Mittal, along with the NIC PM KISAN team.

– Diksha Shukla, NIC-HQ

Hon'ble Chief Minister of Rajasthan launches Shala Darpan-Teachers App to bolster EduTech in the State

On the occasion of Teachers' Day in Rajasthan, 5th September 2023, the Hon'ble Chief Minister Shri Ashok Gehlot unveiled two user-friendly mobile apps developed by NIC Rajasthan during the state-level Teachers' Day celebration. The event was attended by esteemed dignitaries, including the Hon'ble Minister of Education for the State Dr. Bulaki Das Kalla, Hon'ble Minister of Primary & Secondary Education, Smt. Zahida Khan, Hon'ble Minister of Higher Education, Shri Rajendra Yadav, Hon'ble Minister of Technical Education, Dr. Subhash Garg, State Informatics Officer, Shri Jitendra Kumar Verma, senior officers, and teachers.

Hon'ble Chief Minister of Rajasthan, Shri Ashok Gehlot, launches Shala Darpan-Teachers App in the presence of Hon'ble Minister, State Officials and Teachers to bolster education technology in the state.

The Shala Darpan-Teacher App is a groundbreaking tool designed to streamline school management in government schools across Rajasthan. It allows teachers to effortlessly record daily student attendance and also enables them to mark their own attendance when they are present within the school premises. Additionally, the app facilitates staff leave applications. Dr. Kalla emphasized that Shala Darpan has emerged as an indispensable tool for school management in the state.

Currently, it supports over 83 lakh students, more than 4 lakh staff, and various school-related functions, such as exam results, appointments, postings, admission registrations, and more, in all 70,000+ government schools in Rajasthan. This app promotes transparency and accountability within the education system, making it easier to monitor student attendance and ensure regular school attendance. Notably, the app can function offline, which is particularly convenient for rural areas.

ShalaSamblan 2.0 App aims to bolster the education system in Rajasthan by providing valuable support and feedback to schools. It enables visiting officers to report feedback from any school they visit, allowing for the identification of current education system needs. The app generates tickets based on the input from inspecting officers, which can be closed after necessary actions are taken. Importantly, the mobile app functions seamlessly offline when there is no internet connectivity and synchronizes data once the internet is available.

Key features of the ShalaSamblan 2.0 App include the option for officials to select schools voluntarily in addition to their assigned schools. This allows officials to focus their efforts on schools that require support the most. The app also includes features for collecting and analyzing data on academic processes, learning outcomes, and various school-related components like ICT, vocational education, and MDM (Mid-Day Meal). This data will play a pivotal role in enhancing the effectiveness of school support and guidance.

The Hon'ble Chief Minister said, "These innovative mobile apps represent a significant step forward in ensuring efficient school management and support, ultimately contributing to the betterment of the education system in Rajasthan. They exemplify the state government's commitment to harnessing technology for the benefit of teachers, students, and the education system as a whole.

– Amit Agarwal, Rajasthan

Hon'ble Chief Minister of Punjab unveils 'Embossing of Documents' Service to revolutionizes Property Transactions

The "Embossing of Documents" application, developed within the ServicePlus Framework by NIC Punjab, represents a groundbreaking advancement in property transactions for Non-Resident Indians (NRIs) in Punjab, India. Launched by Punjab's Hon'ble Chief Minister, Shri Bhagwant Mann, on July 24, 2023, this application marks a crucial milestone in improving administrative efficiency and transparency in the state.

Hon'ble Chief Minister of Punjab, Shri Bhagwant Mann unveils 'Embossing of Documents' Service in order to revolutionize property transactions and improve administrative efficiency in the state.

The significance of this application was underscored by the presence of esteemed dignitaries at the launch event, including Shri Brahm Shankar Sharma, Minister of Revenue, Shri Anurag Verma, Chief Secretary Punjab, Shri K.P. Sinha, Financial Commissioner, Punjab, and Shri Vivek Verma, DDG & SIO Punjab, along with other high-ranking officials. These attendees witnessed the transformative potential of this service in revolutionizing property transactions for NRIs.

The primary purpose of the "Embossing of Documents" Application is to empower NRIs to authorize individuals in India to execute property sales on their behalf. What sets this application apart is its seamless automation, which enables the swift submission of authorization applications to relevant officers across 29 locations, including the DC Office, Divisional Commissioner, and FCR (State) office, all while adhering to specified conditions.

A notable feature is the user's ability to schedule visits for document scrutiny at their preferred location with dedicated slot booking for all 29 sites. This flexibility extends to final document embossing. Integration with Punjab's IFMS streamlines payments, enabling direct fee submission to the revenue department's account, eliminating third-party steps, reducing reconciliation efforts, and enhancing financial efficiency.

The success of the "Embossing of Documents" service is a result of dedicated collaboration led by Shri Amolak S. Kalsi and Shri Pankaj Jain, with guidance from SIO Punjab. Their commitment guarantees significant benefits for NRIs and all property transaction stakeholders.

– Parminder Kaur, Punjab

Chief Secretary, J&K Launches 107 New Online Services, Expanding Access through Auto Appeal System

In a significant step towards digital governance and enhanced public service accessibility, the Chief Secretary of Jammu and Kashmir has recently inaugurated the onboarding of 107 new online services onto the Auto Appeal System. This development brings the total number of online services available through the Service Plus platform of NIC to a staggering 210, providing citizens with a convenient and efficient way to access government services.

The inauguration marks a momentous occasion for the region, signifying the government's commitment to modernizing public service delivery and embracing digital transformation. With this expansion, citizens across the Union Territory now have access to a comprehensive range of government services at their fingertips, making governance more citizen-centric and accessible.

The Auto Appeal System, integrated with the Service Plus platform, has emerged as a game-changer in facilitating a wide array of government services online. It allows citizens to access and apply for services through a single, user-friendly portal, simplifying the entire process. This system not only saves valuable time and effort for citizens but also reduces the need for physical visits to government offices, a crucial feature in the context of the ongoing global health challenges.

The 107 new services added to the platform encompass a diverse range of sectors and departments. From obtaining essential documents to accessing government schemes and services, these online offerings cover various aspects of daily life. Some of the notable services include:

One of the most significant advantages of this digital initiative is its accessibility. Citizens can avail of these services from the comfort of their homes, eliminating the need to stand in long queues or make multiple visits

Chief Secretary, Jammu & Kashmir UT launched onboarding of 107 online services, added in the Auto Appeal System of J&K

to government offices. All that's required is an internet connection, and citizens can access these services 24/7 through the official portal at (https://eunnat.jk.gov.in).

The onboarding of these additional online services not only enhances the ease of doing business but also promotes transparency and accountability in government operations. It is a significant step towards realizing the vision of a Digital India and empowers citizens by giving them direct access to government services in a hassle-free manner. This initiative sets a precedent for other regions to follow, illustrating the transformative potential of digital governance in enhancing the lives of citizens.

- Mohd. Saleem Khan, Jammu & Kashmir

Delhi Takes a Technological Leap in Forensic Science by Blockchain Integration for Secure Evidence Management

In a ground breaking move to enhance transparency and security in forensic evidence management, Hon'ble Lieutenant Governor of Delhi, VK Saxena, has introduced Blockchain Technology into the Inter-Operable Criminal Justice System for the Delhi Forensic Science Laboratory (DFSL). This collaboration with NIC aims to revolutionize digital evidence recording, storage, and safeguarding.

The incorporation of Blockchain Technology into DFSL's e-forensic application is a significant milestone for forensic science and the criminal justice system. Blockchain's reputation for tamper-proof and transparent record-keeping makes it an ideal solution for preserving critical evidence, aligning with the broader mission to enhance forensic investigation efficiency and reliability.

This integration provides transparent and tamper-proof digital evidence records through Blockchain technology, ensuring integrity and authenticity. It benefits the criminal justice system by enhancing trust, reducing litigation, improving efficiency, ensuring security, and maintaining accountability.

In this system, crucial steps in the criminal justice process are represented as blocks in a chain, each with a unique code. These blocks include the initial crime report, first information report details, jurisdiction information, forensic team visits, and more. Each time evidence changes hands, a new block is added, documenting custody.

In contrast to previous systems, where information was logged into the Crime and Criminal Tracking Network and Systems (CCTNS), the blockchain

Hon'ble Lieutenant Governor of Delhi launched Blockchain Technology in Inter-Operable Criminal Justice System for DFSL in Delhi

system ensures anonymity and confidentiality. Investigating officers and even forensic experts do not have access to forensic evidence details until they receive the final report.

Blockchain technology ensures transparency, trust, security, and efficiency in the criminal justice system while automating the forensic workflow with confidentiality. This step enhances coordination, contributes to an equitable justice system, and accelerates justice delivery, marking a significant leap toward technology-driven societal benefit.

– Informatics Desk, NIC-HQ

Project AMBER Empowers Women and Underprivileged Groups with Cloud Skills Training

In a significant collaborative effort, the Ministry of Skill Development and Entrepreneurship (MSDE) has partnered with Generation India Foundation (GIF) and Amazon Web Services India (AWS India) to launch Project AMBER. This initiative aims to provide cloud skills training to 1,500 learners, connecting them with valuable employment opportunities. The project falls under the SANKALP program of MSDE and carries a specific focus on women and underprivileged groups. The project comes at a time when the interest and participation of women in digital skills training have been on a steady rise. Recognizing the importance of bridging the gender gap in the tech industry, the collaboration between the government and the industry becomes crucial in providing women with the necessary resources, mentorship, and networking opportunities to establish sustainable livelihoods and careers.

Project AMBER is a joint undertaking by the National Skill Development Corporation (NSDC), operating under MSDE, and GIF. It is co-funded by MSDE through the SANKALP program and private philanthropy. The overarching goal of the project is to train 30,000 youths, with 50% of them being women.

As part of this partnership, learners participate in AWS (re/Start), a workforce development program tailored for unemployed and underemployed individuals. This program covers fundamental AWS cloud skills and provides practical career guidance, including resume writing and interview preparation. Learners undergo training in various technologies, including Linux, Python, networking, security, and relational databases. Moreover, the program covers the costs for learners to take the AWS Cloud Practitioner Certification exam, a credential widely recognized in the industry. This certification validates their cloud skills and knowledge, and it also connects them with job interview opportunities in the cloud or IT sector with local employers.

Shri Atul Kumar Tiwari, Secretary, MSDE, emphasized the transformative power of automation and technological advancements in shaping job opportunities and driving economic growth in India. He highlighted the importance of collaboration with AWS re/Start to provide cloud computing skills and expand career possibilities for women in the technology sector. He noted that the initiatives is instrumental in nurturing the potential of India's youth in the evolving landscape of Industry 4.0 and Web 3.0.

Amit Mehta, Head of Business Development for Education & Training at AWS India, praised the collaboration between AWS re/Start, MSDE, NSDC, and GIF. He highlighted how AWS re/Start not only helps individuals launch successful cloud careers but also supports organizations in gaining a competitive edge by providing them with in-demand talent. This collaborative effort aims to create a diverse and robust pipeline of young cloud computing professionals, ultimately contributing to the digital transformation of organizations across India.
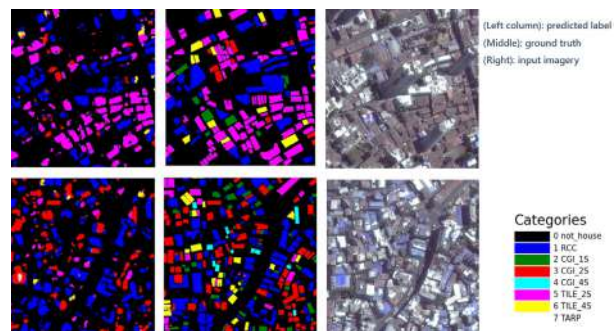
Source- *https://nsdcindia.org*

SunnyLives AI: Transforming Disaster Preparedness with Hyper-Local Insights

As natural disasters grow more frequent and severe, SEEDS, in partnership with Microsoft and Gramener, rises to the challenge with "Sunny-Lives." This AI-powered disaster impact model delivers near real-time warning advisories to vulnerable communities, transforming disaster preparedness and response. SunnyLives leverages AI's power to provide hyper-local disaster risk insights. It analyzes high-resolution satellite imagery, employs advanced data analytics, and machine learning to identify disaster-prone areas. A key focus is assessing home vulnerability based on roof types, vital for resilience against cyclones and hurricanes.

One of the most pioneering features of SunnyLives is its capacity to offer near real-time warning advisories. The moment the trajectory of an impending disaster is predicted, the model springs into action. It rapidly processes data, generating risk scores for individual houses within affected areas in a matter of hours. This enables disaster response teams to prioritize their efforts and provide timely warnings to communities at risk. However, Sunny-Lives is not limited to data analysis alone; it empowers vulnerable communities by delivering actionable information. Advisories are disseminated in local languages, ensuring that residents comprehend the risks they face and are equipped with the knowledge needed to protect themselves. These advisories offer comprehensive guidance on securing homes, seeking shelter, and taking necessary precautions in the lead-up to an impending disaster.

A core focus of this innovative model has been the identification of vulnerable homes based on their roof types. Roofs serve as a proxy for evaluating a building's vulnerability – concrete roofs are more resilient to cyclonic winds compared to thatched roofs. This approach has enabled SEEDS to pinpoint households in dire need of assistance.

For creating the AI model, over 50,000 houses were manually tagged with roof types using high-resolution satellite imagery. This meticulously curated training data served as the bedrock for the AI model, ultimately achieving an accuracy rate approaching 90%.

(Left column): predicted label
(Middle): ground truth
(Right): input imagery

Categories
0 not_house
1 RCC
2 CGI_15
3 CGI_25
4 CGI_45
5 TILE_25
6 TILE_45
7 TARP

During the onset of Cyclone Yaas, the SunnyLives AI model was deployed at scale, producing risk scores for every house within the affected area in a matter of hours. Advisories in local languages were distributed to nearly 1,000 families, offering step-by-step instructions on securing their homes and finding shelter prior to the cyclone's arrival.

The triumphant deployment of the SunnyLives AI model has paved the way for its potential implementation in other countries confronting analogous cyclone risks. Moreover, it can be adapted to tackle diverse weather challenges, such as identifying homes susceptible to heatwaves in densely populated urban areas. SEEDS is also exploring the prospect of utilizing AI to pinpoint earthquake-prone houses in Uttarakhand, a Himalayan state. SunnyLives AI stands as a testament to the potent intersection of innovation and humanitarianism. It exemplifies how AI, harnessed for the greater good, can exert a profound influence on the lives of those most vulnerable to the forces of nature.

Source- *news.microsoft.com*

United States takes Aim at Deepfakes

In an era characterized by rapid technological progress, a daunting challenge looms before us: the proliferation of deepfakes. These artificial and manipulated media productions, harnessing the continually advancing potential of artificial intelligence and machine learning, pose a substantial cybersecurity risk. In a concerted effort to tackle this menace head-on, the United States' National Security Agency (NSA), in partnership with the Federal Bureau of Investigation (FBI) and the Cybersecurity and Infrastructure Security Agency (CISA), has issued a vital resource known as the "Contextualizing Deepfake Threats to Organizations" Cybersecurity Information Sheet (CSI).

Deepfakes represent a transformative shift in media manipulation, encompassing multimedia content synthetically generated or manipulated using advanced machine learning techniques. These technologies enable malicious actors to craft convincing replicas of real individuals engaging in actions or making statements they never did. Beyond deepfakes, these manipulations go by names like Shallow/Cheap Fakes, Generative AI, and Computer Generated Imagery (CGI).

Candice Rockell Gerstner, an NSA Applied Research Mathematician specializing in Multimedia Forensics, underscores the gravity of the situation: "The tools and techniques for manipulating authentic multimedia are not new, but the ease and scale with which cyber actors are using these techniques are. This creates a new set of challenges to national security." Organizations must equip themselves to recognize deepfake techniques and have comprehensive response plans in place. The CSI outlines strategies for organizations to mitigate the deepfake threat:

1. Real-time Verification Capabilities: Implement technologies for real-time verification of multimedia content to distinguish authenticity.

2. Passive Detection Techniques: Employ passive techniques to proactively detect deepfakes before they cause harm.

3. Protection of High-Priority Officers and Communications: Prioritize safeguarding high-ranking officials and their communication channels, often primary targets of deepfake attacks.
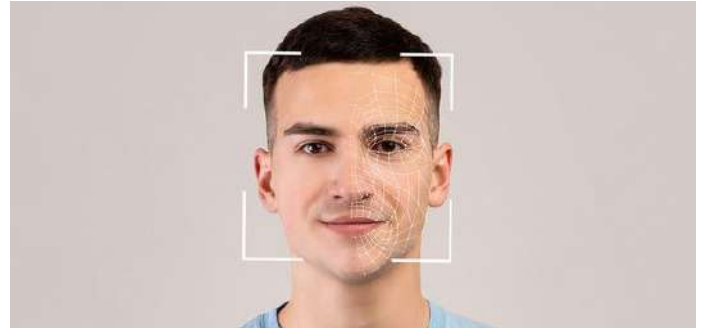
4. Minimizing Impact: The guidance emphasizes information sharing, planning, rehearsing responses, and personnel training to mitigate deepfake impact.

Deepfakes extend beyond cybersecurity, with implications including undermining brands, impersonating leaders, enabling fraudulent communications, and inciting public unrest through the spread of false information. Technological advances in computational power and deep learning have made mass production of fake media easier and more affordable, even for those with minimal technical skills. Many deep learning-based algorithms are readily available on open-source platforms, posing a significant national security risk.

The joint effort by the NSA, FBI, and CISA in releasing the CSI is a pivotal step in addressing the deepfake threat. It equips organizations with the tools and knowledge needed to defend against evolving threats. Security professionals across sectors should heed this guidance, implementing recommended strategies to protect their organizations from deepfake influence, preserving national security and the integrity of the information landscape in a time when reality and fiction blur.

Source- https://opengovasia.com

Singapore's ADEX: Revolutionizing Data Exchange for Government and Business Entities

Singapore is embracing the digital age with its cutting-edge Asynchronous Data Exchange (ADEX) platform. It's a centralized self-service data exchange and event streaming platform, which is set to revolutionize data sharing among government agencies and local businesses, solidifying Singapore's commitment to becoming a Smart Nation.

ADEX originated from the Sensor Data Exchange (SDX) within the Smart Nation Sensor Platform (SNSP). However, its scope now extends to various data types, including processed sensor data, showcasing Singapore's dedication to leveraging data for societal benefit.

Accessing ADEX is straightforward; agency users can connect via Intranet through the SGWAN interface or MPLS from private networks. ADEX facilitates real-time event data sharing across the Internet and Intranet, ensuring Subscribers receive immediate updates, all while maintaining Publisher control.

ADEX serves as a centralized data exchange hub, creating a marketplace for seamless sharing between government and business entities. It streamlines the exchange process and fosters innovation while maintaining data security. Hosting on the Government Commercial Cloud ensures data protection, and upcoming streaming capabilities will further enhance real-time data exchange.

ADEX is already in action, facilitating essential data sharing. It helps agencies share COVID-19 enforcement data for efficient deployment of safe distancing officers, manages crowd control data, and aids environmental monitoring efforts with crucial datasets.

In conclusion, ADEX is a significant step towards a more connected, data-driven, and efficient Singapore. By enabling seamless data exchange among government agencies and fostering collaboration with local businesses, ADEX is poised to play a pivotal role in Singapore's journey to becoming a Smart Nation. As it evolves and expands its capabilities, ADEX is set to redefine the landscape of data exchange, not only in Singapore but also globally.

Source- https://www.developer.tech.gov.sg

SVAMITVA and Mission Antyodaya Earn Gold and Silver at National e-Governance Awards 2023

The SVAMITVA and Mission Antyodaya Projects were honored with the prestigious National Awards for e-Governance 2023 - Gold and Silver respectively for their pioneering utilization of emerging technologies to deliver citizen-centric services. These accolades were presented at the 26th National Conference on e-Governance (NCeG) in Indore, Madhya Pradesh, on August 25, 2023, by Dr. Jitendra Singh, Union Minister of State for Personnel, Public Grievances and Pensions.

Under the theme 'Viksit Bharat, Empowering Citizens,' the 26th NCeG was jointly organized by the Department of Administrative Reforms and Public Grievances (DARPG), Government of India, and the Ministry of Electronics and Information Technology (MeitY), Government of India, in collaboration with the Government of Madhya Pradesh.

The SVAMITVA Project, which empowers rural property owners through drone and GIS technology, received the prestigious National Award for e-Governance 2023 (Gold). This recognition underscores its innovative approach in providing citizen-centric services. The initiative's success is the result of collaborative efforts involving Survey of India, State Revenue and Panchayati Raj Departments, and NIC–GIS.

Similarly, the Mission Antyodaya initiative by the Department of Rural Development, Government of India, earned the Silver Award in the "Government Process Re-engineering for Digital Transformation" category at NCeG. This program optimizes resource utilization across 26 ministries, conducting surveys and collecting vital data at the village level to drive digital transformation and promote equitable development.

The accolades bestowed upon the SVAMITVA and Mission Antyodaya Projects highlight their dedication to leverage technology for citizen empowerment and digital advancement. They serve as shining examples of how e-Governance can enrich lives and foster inclusive development

NIC Assam Shines Bright with Dual Wins at ET DigiTech Conclave 2023

In a shining moment of recognition for innovation and technological prowess, NIC Assam secured two coveted awards at the ET DigiTech Conclave held at Grand Hyatt, Goa, from August 4th to 6th, 2023. These accolades, a Gold and a Silver Award, celebrated NIC Assam's groundbreaking contributions to the world of emerging technologies and their applications in critical domains.

In the "Leader in Emerging Technology Initiatives" category, NIC Assam's "Prishtee" won the top honor. "Prishtee" uses LoRa communication technology to provide independent mobile app communication in remote areas, benefiting emergency situations and rural communities.

The experimental results affirm the effectiveness and feasibility of "Prishtee" in delivering reliable communication when traditional communication channels falter. It serves as a lifeline during times of crisis, ensuring that critical information can be relayed even in areas with limited connectivity.

In the "Digital Initiative in making Climate/Disaster Resilient State/City" category, "Jaltarangini" earned the Silver Award. Developed with the Assam State Disaster Management Authority (A.S.D.M.A), it transforms river water level monitoring with IoT technology, thus offering real-time reporting without human intervention and seamless data visualization.

The recognition of NIC Assam at the ET DigiTech Conclave 2023 underscores the organisation's unwavering commitment to harnessing technology for the betterment of society. These award-winning initiatives showcase not only technological prowess but also a deep understanding of the unique challenges faced by remote and disaster-prone regions