

Informatics

An eGovernance Publication from National Informatics Centre



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Editorial

In the world's largest democracy, India, elections are a fundamental expression of the people's will and a cornerstone of its democratic framework. The Election Commission of India (ECI), established on January 25, 1950, oversees the conduct of free and fair elections. At the heart of this process, the National Informatics Centre (NIC) has played a pivotal role in integrating technology into election management, significantly enhancing the efficiency, transparency, and integrity of the electoral process.



One of NIC's most notable contributions is the computerization of electoral rolls. This monumental task began in 1998 when NIC digitized the electoral rolls of 620 million voters. This digitization significantly improved the accuracy and reliability of voter data, reducing errors and minimizing opportunities for fraudulent entries. The maintenance of up-to-date and precise electoral rolls is crucial for a fair electoral process, and NIC's efforts in this regard have been transformative.

To further bolster electoral integrity, NIC facilitated the introduction of Elector Photo Identity Cards (EPIC) for voters. These cards are essential in preventing impersonation and ensuring that each vote cast is legitimate. The implementation of the Electoral Rolls Management System by NIC has streamlined the preparation, revision, and maintenance of electoral rolls, making these processes more efficient and transparent.

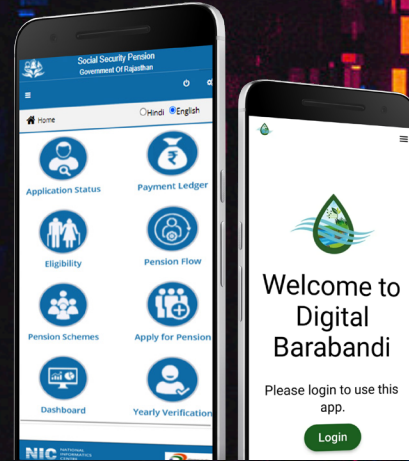
NIC's technological expertise extends to operational aspects of election management. The organization provides systems for the drafting and deployment of polling personnel, randomization of Electronic Voting Machines (EVMs), and the appointment of sector and zonal magistrates. These pre-poll activities are critical for logistical planning and ensure the smooth conduct of elections.

On election day, NIC's ICT solutions provide crucial real-time monitoring and transparency. The Communication Plan for Election Tracking (ComET) tracks election milestones and polling progress via SMS, enabling swift issue reporting and resolution. NIC also facilitates live webcasting and video streaming from polling stations, allowing officials, political parties, and the public to observe the process, enhancing trust and accountability.

After voting, NIC oversees the counting of votes and dissemination of results. Its computerized systems ensure accuracy and transparency. NIC transmits results to Chief Electoral Officers (CEOs) and the ECI, ensuring timely reporting. It also sets up media centers at counting locations for efficient result dissemination and employs Geographic Information Systems (GIS) for election management, aiding in polling station rationalization and election data visualization.

Through its comprehensive and innovative ICT solutions, NIC has greatly strengthened India's democratic values by ensuring elections are conducted with integrity and transparency. As technology evolves, NIC continues to lead, enhancing the robustness and resilience of India's electoral process. NIC remains committed to innovation, as demonstrated by its cutting-edge products like **NextGEN DISE**, which further streamline and modernize election management, ensuring a secure and efficient democratic process.

-Editor-In-Chief



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Disclaimer

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General Elections 2024

Elections are the cornerstone of democratic governance, providing citizens with the power to choose their representatives and shape the policies that affect their lives. In India, the electoral process is a monumental event, both in scale and complexity, reflecting the nation's vast diversity and vibrant democratic ethos. Conducting elections in India involves meticulous planning, coordination, and the integration of advanced technologies, making it a fascinating subject of study for political scientists, technologists, and governance experts alike.

India's elections are distinct from those in other parts of the world due to several unique factors. Firstly, the sheer scale of the electoral process is unparalleled. With over 900 million eligible voters, India's elections are the largest democratic exercise globally. This vast electorate is spread across urban and rural areas, encompassing a multitude of languages, cultures, and socio-economic backgrounds. Managing such a diverse and expansive voter base requires innovative approaches to ensure inclusivity and accessibility.

Secondly, the technological integration in Indian elections sets a global benchmark. India has been a pioneer in the use of Electronic Voting Machines (EVMs) and has continuously evolved its electoral technology to enhance transparency and efficiency. The introduction of Voter Verifiable Paper Audit Trails (VVPATs) has further cemented the credibility of the electoral process, providing a verifiable paper trail for each vote cast.

The Election Commission of India (ECI), an autonomous constitutional authority, plays a pivotal role in overseeing the entire electoral process. Its responsibilities range from updating electoral rolls and regulating campaign activities to ensuring compliance with election laws and managing the logistical aspects of elections. The ECI's autonomy and extensive powers are crucial for maintaining the integrity and fairness of the electoral process, a feature that is often highlighted in global comparisons.

Security is another critical dimension where Indian elections differ significantly from global counterparts. Given India's diverse security

landscape, extensive planning and coordination among multiple security agencies are essential to ensure a safe and secure voting environment. This involves deploying central and state police forces, paramilitary units, and even the military in sensitive areas, tailored to the specific security needs of different regions.

Moreover, the pre and post-election activities in India are marked by meticulous preparations and comprehensive measures to address potential challenges. From candidate selection and campaign strategy development to voter registration drives

Democracy is not just a question of having a vote. It consists of strengthening each citizen's possibility and capacity to participate in the deliberations involved in life in society - Fernando Cardoso

and logistical planning, the pre-election phase involves a series of coordinated efforts aimed at ensuring a smooth electoral process. Post-election activities, including vote counting, result declaration, and dispute resolution, are managed with precision to uphold the democratic principles of transparency and fairness.

The Election Commission of India (ECI) has been at the forefront of leveraging technological advancements to enhance the electoral process in India. This commitment to modernization has significantly contributed to the efficient and transparent elections, addressing the needs of a diverse range of stakeholders, including voters, political parties, and administrative officials. The integration of Information and Communication

Technology (ICT) into the electoral framework has been pivotal in transforming the ECI into a responsive organization capable of handling the complexities of the electoral landscape.

In its quest to become a responsive and efficient organization, the ECI has embraced e-Governance by adopting IT-enabled seamless operations across all its offices nationwide. This initiative aims to build a core set of integrated IT applications that cover all functions of the ECI, serving various stakeholders during pre-election, election, post-election, and non-election phases.

Technology has played a crucial role in ECI's election management, covering all stages from elector registration to result declaration. During the 2024 Lok Sabha Elections, ECI's IT systems, backed by NIC's infrastructure, facilitated smooth operations for election offices nationwide and seamless public-facing portals. The Commission commends the leadership and NIC teams for their exceptional support. Special recognition goes to Sh. R S Mani for ensuring high availability and security, and to Sh. M Muthu Kumaran and Sh. Sanjay Rastogi for their continuous coordination and system optimization. The Commission also extends gratitude to all NIC teams at State and District Centres for their vital role in supporting ground operations and contributing to the success of the 2024 elections."



Rajiv Kumar
Chief Election Commissioner
Election Commission of India

The primary objective is to transform both the front-end and back-end operations of the ECI and the Chief Electoral Officer (CEO) offices, ensuring a streamlined and cohesive electoral process.

Over time, the ECI has developed and innovated IT applications/apps for the ease of voters, political parties and ECI officials. These applications have addressed a myriad of issues, enhanced performance and resolving challenges faced in the electoral process. However, the ECI now intends to advance to the next phase by consolidating the functionalities of these applications into a centralized, integrated application.

The centralized integrated application envisioned by the ECI aims to consolidate and streamline key functions, offering a unified platform for electoral management. This application will encompass various critical functionalities, ensuring a cohesive and efficient electoral process.

The National Informatics Centre (NIC) plays a crucial role in supporting the Election Commission of India (ECI) at various levels—state, district, and central—by providing technical assistance, developing IT applications, and ensuring the smooth functioning of electoral processes. NIC's contributions are integral to the modernization and efficiency of the electoral system, helping to manage the vast and complex landscape of Indian elections.

NIC has been providing support for all the elections in all the districts and at state headquarters. These include Parliamentary, Legislative, Local bodies and Panchayat elections. The support is provided at various levels for the election processes during pre polling, polling and post polling events/ activities/ processes.

At the state level, NIC plays a crucial role in customizing and deploying IT applications to meet the unique needs of each state's election commission. This involves developing state-specific modules within the broader Election Management System (EMS), which include functionalities for constituency mapping, election worker



management, and logistical planning. NIC ensures that these state-level applications are seamlessly integrated with the central EMS, facilitating efficient data exchange and coordination. In addition to application development, NIC provides extensive training and technical support to state election officials. This includes conducting workshops and hands-on training sessions to ensure that officials are proficient in using the electoral IT systems.

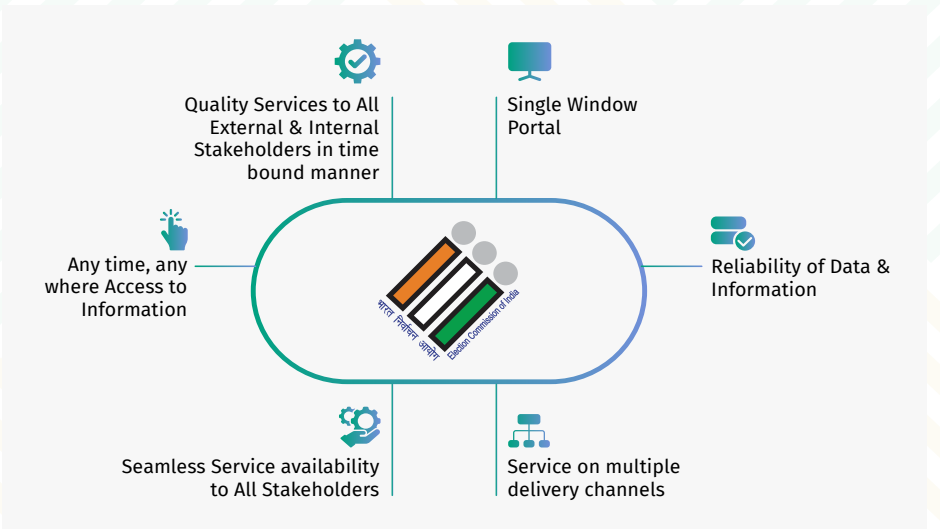
At the district level, NIC's involvement is equally comprehensive and vital. NIC aids district election offices in managing polling stations through IT tools that optimize their placement and resource allocation. These tools ensure that polling stations are accessible and adequately equipped, enhancing the overall efficiency of the voting process. During the election period, NIC provides real-time monitoring applications that track the movement

The unwavering support and expertise provided by NIC have been instrumental in the successful conduct of the Lok Sabha Elections 2024. The NIC team's dedication, loyalty, and team spirit were pivotal in overcoming numerous challenges, ensuring a smooth and effective election process. Their innovative solutions and commitment to excellence facilitated seamless operations, real-time reporting, and robust data management, significantly enhancing the transparency and integrity of the elections.

I would like to extend my heartfelt appreciation to the entire NIC team for their invaluable support and relentless efforts throughout the entire election process. Their hard work and collaboration with the Election Commission of India have been crucial in bringing the elections to a successful and fruitful conclusion. NIC's contribution has set a high standard, and we look forward to continuing this partnership for future electoral endeavours.



Dr. Neeta Verma
 Director General (IT)
 Election Commission of India



It has been a privilege for NIC to collaborate with the Election Commission of India in transforming the electoral process through advanced technological solutions. The development and deployment of the Observer Portal for the Lok Sabha Elections 2024 exemplify our commitment to supporting the ECI with cutting-edge innovations. Our team worked diligently to ensure the robustness of the portal, enabling real-time reporting, data integration, and effective monitoring. Advanced security measures and real-time monitoring capabilities ensured seamless handling of high traffic, mitigation of cyber threats, and effective technical support during result dissemination on election day.



Amit Agrawal IAS
 Director General
 National Informatics Centre

of Electronic Voting Machines (EVMs), the progress of voting, and any incidents or irregularities that may arise. This real-time monitoring capability enables district election officials to respond promptly to issues, ensuring a smooth and secure election process. NIC also supports the district-level grievance redressal system, which allows citizens to report problems related to voter registration, polling, and other electoral activities. This system ensures that grievances are logged, tracked, and resolved efficiently, bolstering voter confidence and participation by addressing their concerns promptly. Additionally, NIC conducts training programs for district election officials and poll workers, equipping them with the skills needed to operate electoral IT systems effectively. This training is crucial for building the capacity of district election offices to manage elections seamlessly. NIC DIOs are appointed as District Nodal officer at Election Management Cell during the election time for involvement in election related activities.

NIC Headquarter is responsible for setting up and maintaining the IT infrastructure required for conducting elections. This includes servers, data centres, and secure communication networks. NIC also implements cybersecurity measures to protect electoral data from cyber threats, ensuring the confidentiality and integrity of the election process. Major ECI ICT Applications are hosted in NIC Data Centre, NIC provide technical support in managing these applications in terms of architecture based.

During the counting process, NIC has been

instrumental in ensuring the smooth dissemination of election results, even during the 2024 Lok Sabha elections. Leveraging its technical expertise, NIC's Election Commission Informatics Division (ECID) manages all applications hosted on the NIC Cloud, providing critical technical support to the ECI. This support is essential for the seamless announcement of election results, involving several well-defined steps to ensure security and efficiency.

Before the dissemination of election results, the ECID, NIC undertakes a series of critical activities to ensure a seamless and hiccup-free process on the day results are announced. For the Lok Sabha Election Results 2024, NIC, in collaboration with the Election Commission of India (ECI), meticulously prepared the system to address any potential challenges that might arise during the result dissemination.

One of the primary activities involves detailed discussions with state NIC offices. These discussions are essential for aligning the strategies and protocols that will be implemented on the result day. NIC ensures that all state-level IT infrastructures are synchronized with the central system, facilitating smooth data flow and coordination.

Additionally, network security is a top priority. NIC performs comprehensive security checks to safeguard the ECI's network against any malicious attacks. This includes setting up firewalls, intrusion detection systems, and regular security audits to identify and mitigate vulnerabilities. By sensitizing the ECI network regarding potential threats and ensuring robust security measures, NIC aims to protect the integrity of the election results.

To prepare for any unforeseen failures, NIC conducts Disaster Recovery (DC-DR) drills. These drills simulate various failure scenarios to test the resilience and responsiveness of the IT infrastructure. The objective is to ensure that in the

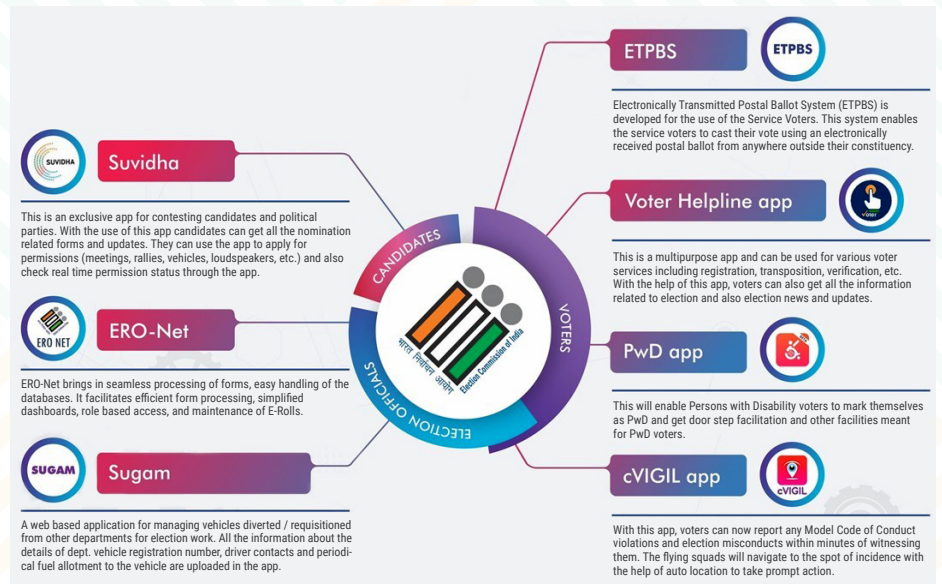
event of a system failure, the backup systems can be activated immediately, minimizing downtime and ensuring continuity in the result dissemination process.

NIC also performs extensive load testing on the IT systems that will be used for result dissemination. This involves simulating high traffic conditions to evaluate the system's capability to handle the expected load on the result day. Through these tests, NIC can identify any bottlenecks or weaknesses in the system. If any enhancements in the architecture are required, NIC implements them well in advance to ensure the system can efficiently manage the heavy data traffic during result dissemination.

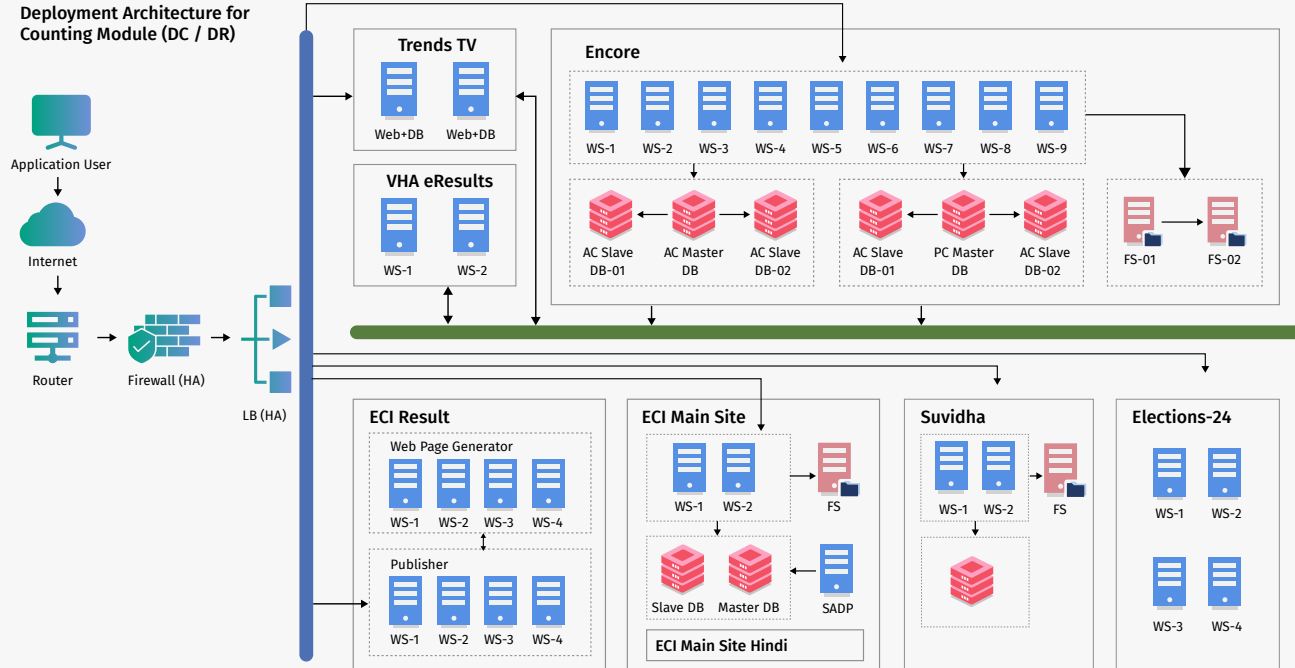
In the final phase of preparations, NIC ensures that all components of the IT infrastructure are fully operational and ready for the result day. This includes checking all hardware and software components, verifying network configurations, and ensuring that all security protocols are in place. NIC also conducts final training sessions for ECI officials to familiarize them with the systems and protocols, ensuring that everyone is well-prepared to handle the result dissemination process smoothly.

On the day of the Lok Sabha Election Results 2024, the result dissemination architecture managed an immense volume of traffic, starting from 1,00,000 hits per second to an astonishing peak of 2.5 million hits per second. This high demand required robust systems and meticulous planning to ensure that the servers could handle the intense load without compromising performance. NIC, in collaboration with its partners, had prepared extensively for this scenario, implementing load balancing, scalable server infrastructure, and real-time monitoring to ensure the systems remained responsive and stable throughout the day.

In addition to managing the high traffic, NIC had to address significant cybersecurity threats, particularly DDOS attacks. These attacks aimed to overwhelm the system with excessive traffic,



Deployment Architecture for Counting Module (DC / DR)



Providing technical support to the Election Commission of India for the Lok Sabha Elections 2024 has been an extraordinary journey. NIC's team took the lead in managing ECI applications, effectively handling high traffic and mitigating cyber threats through advanced security measures and real-time monitoring capabilities. Our team's dedication and expertise ensured the seamless operation of these critical applications, safeguarding the integrity of the electoral process.

NIC is proud to witness the positive impact of our collaboration with the ECI. The success of the 2024 elections is a testament to our innovative solutions and unwavering commitment to excellence. We remain dedicated to supporting future elections with cutting-edge technologies and innovative approaches, continually enhancing the transparency, security, and efficiency of the electoral process. Our partnership with the ECI is a source of great pride, and we look forward to contributing to the success of many more elections to come.



G. Mayil Muthu Kumaran
Dy. Director General
National Informatics Centre

potentially disrupting the result dissemination process. To counter these threats, NIC worked closely with the CERT-IN, TCS SOC, ECID NIC and NIC-Cert.

The successful dissemination of the Lok Sabha Election Results 2024, despite unprecedented traffic and significant cybersecurity threats, underscores the effectiveness of NIC's comprehensive planning and collaboration with key partners. By leveraging advanced technologies and maintaining a state of high alert, NIC, along with CERT-IN, TCS SOC, and ECID NIC, ensured that the election results were delivered smoothly, securely, and transparently. This collective effort not only safeguarded the integrity of the election process but also reinforced public confidence in the democratic system.

ECID, NIC, developed the Observer Portal to enhance oversight and transparency during the Lok Sabha Elections 2024. During the 2024 elections, the Observer Portal focused on operationalizing the Field Observers and Reporting modules. These components enabled election observers—comprising General Observers, Police Observers, and Expenditure Observers—to submit real-time reports and conduct thorough data analysis. Such capabilities were pivotal in swiftly addressing electoral issues and guiding informed decision-making.

The development process of the Observer Management System adhered closely to Functional Requirement Specifications (FRS) provided by ECI, employing Agile methodology and the latest IT platforms. Prior to its launch, rigorous testing and multiple application demos were conducted in collaboration with the NIC/ECI team.

Key integrations include the use of C-DAC's e-sign

service for digital authentication, NIC email relay for seamless communication, and ECI SMS services for timely notifications. Moreover, the Observer Management System's mobile app is seamlessly integrated with the web-based platform via APIs, ensuring flexibility and accessibility for users in the field.

Looking forward, the ongoing development of the Data Entry and Deployment modules aims to further optimize data management and enhance the efficiency of observer allocation in upcoming elections. These advancements underscore the commitment to continuous improvement and technological innovation in electoral oversight and transparency.

The 2024 Lok Sabha Elections were not just a reflection of the political pulse of the nation but also a testament to the resilience and vibrancy of Indian democracy. With NIC's extensive support and innovative solutions, the Election Commission of India successfully navigated the complexities of this massive electoral exercise, demonstrating a robust commitment to maintaining the sanctity and transparency of the electoral process. As the world watched, India showcased its democratic strength, facilitated by the unwavering support and technological advancements provided by NIC.

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Lakshadweep UT

From Islands to Digital Hubs: E-Governance Evolution in UT

Edited by **NISSY GEORGE**

Lakshadweep, India's smallest Union Territory, is renowned for its natural splendor, characterized by sun-kissed beaches and crystal-clear waters. Visitors are captivated by the tranquility and isolation, along with vibrant coral reefs and rich marine life. This uni-district Union Territory includes 12 atolls, three reefs, five submerged banks, and ten inhabited islands, covering a total area of 32 sq km.

Since 1987, NIC UT Centre has been instrumental in implementing advanced information and communication technology (ICT) in Lakshadweep. NIC's efforts have significantly enhanced good governance by promoting transparency and efficiency in the Union Territory's administration. Through various e-governance initiatives, NIC has transformed the way administrative functions are performed, ensuring streamlined and effective public service delivery.



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NIC Lakshadweep stands at the forefront of the digital revolution, transforming the Union Territory into a beacon of e-governance and IT excellence. As the backbone of technological innovation, the UT Centre seamlessly integrates advanced digital solutions across government sectors, enhancing efficiency, transparency, and accessibility. From pioneering e-governance platforms to modernizing land records and healthcare services, the UT Centre is dedicated to empowering citizens and fostering a connected, future-ready community in the islands.



ICT Initiatives in the State

WEBSTAR (<https://lakport.utl.gov.in/>)

The scattered geography of the Lakshadweep islands in the Arabian Sea necessitates that ship travel serves as the primary mode of transportation for residents. Islanders frequently travel to the mainland for education, medical

treatment, and purchases, making shipping a crucial lifeline for the people of Lakshadweep.

To address the public's ship ticketing needs, NIC Lakshadweep Centre developed and implemented WEBSTAR (Web-based Ship Ticket Advance Reservation System). This application manages the unique and intricate ship routes, which often vary with each voyage from the mainland and sometimes include additional stops at various islands. This complexity distinguishes WEBSTAR from other reservation systems, such as those for railways or airlines.

The system also includes a module for helicopter ticketing, which is used by the Department.

Features

- Allows users to book ship tickets in advance
- Enables users to cancel previously booked ship tickets
- Facilitates the booking and tracking of cargo shipments, providing detailed reports
- Provides up-to-date information on ship departure and arrival times
- Displays the current status of booked tickets, including confirmations and waitlists

POWERLAK

(<https://powerlak.utl.gov.in>)

POWERLAK (Portal & Official Website cum E-governance Repository of Lakshadweep Consumer-fraternity) is a digitally integrated Consumer Management System designed for the comprehensive management of consumer services, including billing, with integrated e-mail and SMS notifications. In the geographically dispersed territory of Lakshadweep, the value of such an online solution and Management Information System (MIS) is significant.

Major Business Processes

I. **Consumer Registration & Management System (G2C & G2E):** Facilitates the registration and management of consumers for both government-to-citizen (G2C) and government-to-employee (G2E) services.

II. **Energy Billing (Bill Generation &**

Cash Collection) (G2E & G2C): Manages the generation of energy bills and cash collection for both government-to-employee (G2E) and government-to-citizen (G2C) interactions.

III. Complaint/Fault Management System (G2E & G2C): Provides a system for managing consumer complaints and faults.

IV. Consumer Portal Online (G2C): Offers an online portal for consumers to access various services.

Operational Features

- Public portal & official website
- Total Consumer Management System
- SMS & e-mail alerts for consumers
- Consumer login and CSC service interface
- Online application for service connections
- BillDesk and NSDG/NSDL payment gateway integration
- Wallet payment and BBPS integration (launched in December 2020)
- Mobile app for reading collection (PowerLAK Reader-app)
- Workflow-based Complaint Management Cell

PGDMS

(<https://pgdms.utl.gov.in>)

The Power Generation & Distribution Management System (PGDMS) is a web-enabled backend application designed to monitor the operations of powerhouses and solar photovoltaic (SPV) power plants in Lakshadweep for the Electricity Department. This system utilizes a role-based authentication mechanism to ensure secure access and is workflow-based to streamline operations.

Features:

- End-to-end computerization of powerhouses
- Real-time monitoring of diesel generators and SPV power plants

School Application Suite

School application suite is a significant advancement in centralizing and streamlining the management of educational data across the scattered islands of Lakshadweep. By providing a unified platform for collecting and managing teacher and student details, it enhances coordination among the various schools. The system also facilitates student transfers and promotions and generates comprehensive reports on both students and teachers. Figure 3.2 showcases the number of (a) schools, (b) teachers, and (c) students registered on the school application suite across various islands.

PEARL

PEARL (Package For Effective Administration For Registration Laws) Registration Software streamlines all functionalities of Sub Registrar Offices in Lakshadweep. It consists of two modules: Public Pearl (<https://pearlnet.utl.gov.in>) and Open Pearl (<https://openpearl.utl.gov.in>).

Through Public Pearl, citizens can apply for required services by signing up and logging in. They can obtain a token from the available ones

and enter all necessary details for registration as per their documents. Applicants must submit the documents for verification at the allotted time before the Sub Registrar Office (SRO). The SRO official will then verify the entered details and either approve or reject the request based on the records. The public can check the status of their submitted applications through Public Pearl.

Land Records Information System

(<https://land.utl.gov.in>)

The computerization of land records in Lakshadweep has been achieved through digitization, ensuring that land and owner details are accurately entered into the system. Various reports are generated to meet the diverse requirements of the administration. The application is integrated with digital maps via the Collabland application, enabling citizens to check map details by providing the survey or subdivision number of their land parcel.

Functional Coverage:

- Record of Right
- Land Register Extract
- Fair Area List
- Island-Wise Landholdings
- Owner-Wise Holdings
- Land Type-Wise Holdings
- List of All Landowners
- Missing Survey Numbers

e-Counselling

(<https://ecounselling.utl.gov.in>)

The Department of Education, Lakshadweep, used to conduct the seat allotment process for higher studies in mainland colleges through a cumbersome procedure. This involved inviting applications to the Education Directorate, preparing candidate rank lists, and selecting seats from Kavaratti, requiring candidates to

travel from other islands. e-Counselling is a digital platform designed to streamline the seat allotment process for Lakshadweep candidates seeking admission to mainland colleges after completing their school education, eliminating the need for extensive travel.

Features:

- End-to-end digitized process flow
- Online registration for candidates
- Online verification
- Online application status tracking
- Online counselling sessions
- Sponsoring letter generation

e-Permit

(<https://epermit.utl.gov.in>)

The e-Permit application processing system issues permits for visiting the islands of Lakshadweep for various purposes. It is a key initiative by the Lakshadweep Administration to advance e-governance. Given the strategic significance of Lakshadweep under the Union of India, entry to the islands is restricted, and the UTL Government issues permits to those wishing to visit.

Visitors can apply online for permits and download approved permits in PDF format.

Features:

- Tracking of permit holders
- Statistics of visitors
- Profession-wise statistics of various islands
- SMS integration
- Online payment integration

Online Inventory System

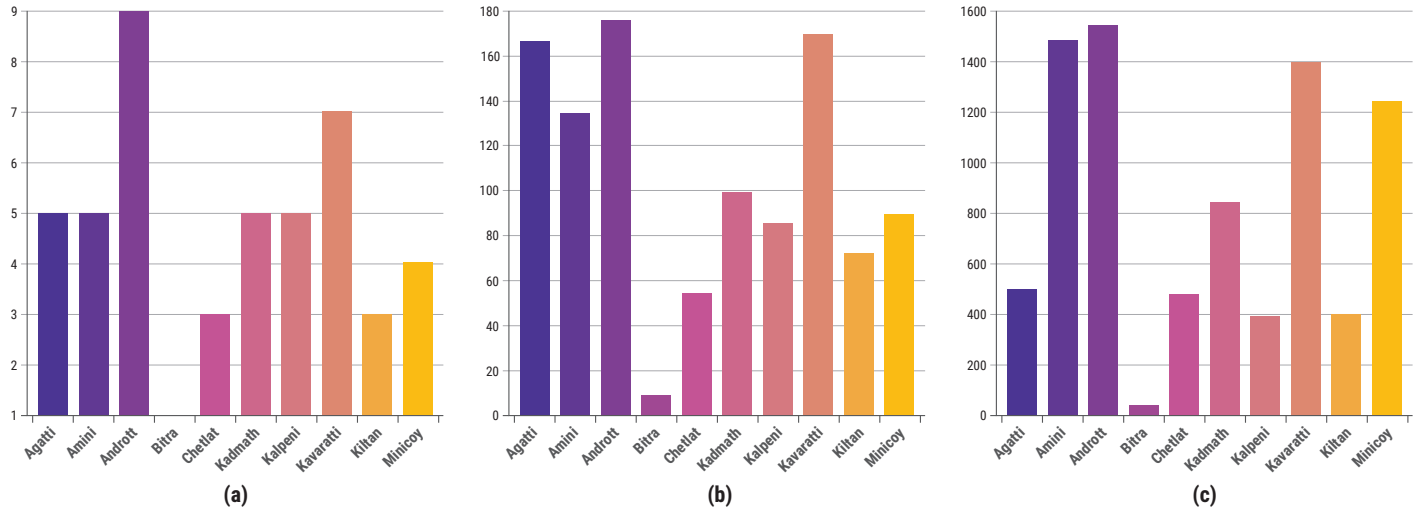
(<https://powerlak.utl.gov.in/invent/login.aspx>)

Developed for the Department of Electricity, UT of Lakshadweep, this online system tracks inventory and manages activities in a workflow model. It ensures transparency and security with at least two levels of user control and

▼ Fig 3.1: eCounselling Lakshadweep Homepage



From the States



▲ Fig 3.2: Number of (a) schools, (b) teachers, and (c) students registered on the school application suite across various islands.

monitoring. Real-time stock positions from this system determine the schedule of cargo barges transporting High Speed Diesel (HSD) oil, ensuring uninterrupted power supply to the islands.

Fisheries e-store

(<http://fisheries.utl.gov.in/>)

The Fisheries e-store, developed for the Department of Fisheries, UT of Lakshadweep headquartered in Kavaratti, centralizes tendering and procurement processes. Operating on a workflow-based system with multi-level sanctioning, it features a centralized activity window for monitoring ROL (Reorder Level), indent, purchase order, shipment, packing, and sales statuses. Items are categorized for efficient management.

Key features include single-entry item management, short supply alerts, ROL notifications, automated email alerts, and consumption analysis. The sales module

manages counter sales of fisheries equipment, HSD oil, etc., generating daily consolidated sales and consumption reports for assessment and monitoring by higher authorities.

Lakshadweep Guest House Management System

(<https://lghms.utl.gov.in>)

The Lakshadweep Guest House Management System aims to digitize all guest houses administered by the Lakshadweep Administration, enhancing transparency and accountability in reservation and allotment processes. A mobile application allows the public to book rooms and track application statuses.

Official Website of Lakshadweep Administration

(<https://lakshadweep.gov.in>)

Managed by NIC using an indigenous solution developed by NIC Lakshadweep, the official

website of the Lakshadweep Administration has recently been redeveloped on the S3WAAS platform. It incorporates CMS features and complies with Government of India guidelines, ensuring it remains one of the most updated websites under S3WAAS in terms of content.

eDistrict Lakshadweep

(<https://edistrict.utl.gov.in>)

NIC Lakshadweep leads the eDistrict initiative to digitize 29 services across various departments. Using the ServicePlus platform, this initiative provides citizens with a unified interface for applying and obtaining services online, including additional value-added services, thereby enhancing government-citizen interactions.

Central Projects

MGNREGA

(<https://nrega.nic.in>)

This national project aims to bolster livelihood security in rural areas by guaranteeing at least 100 days of wage employment per financial year to households whose adult members opt for unskilled manual labor. It is operational across all islands.

PM Kisan

(<https://pmkisan.gov.in>)

PM Kisan is a Central Sector scheme fully funded by the Government of India. Implemented in Lakshadweep, it is administered by the Department of Agriculture to provide direct income support to eligible farmers.

VAHAN & SARATHI

VAHAN & SARATHI are comprehensive systems implemented in Lakshadweep to streamline vehicle registration and driving license processes. VAHAN automates activities related to Vehicle Registration, Fitness, Taxes, Permits, and Enforcement, allowing the Transport Department to focus on critical business issues. SARATHI 4.0,

▼ Fig 3.3: NIC Officers explaining the benefits of Sarathi 4.0 to RTO Officers at Lakshadweep Regional Transport Office during Sarathi 4.0 launch event in 2022.



launched in 2022, facilitates the issuance of learners licenses, new driving licenses, renewals, and transactions like changes in name, address, and biometrics. Both systems feature workflow-based processing and generate Management Information System (MIS) reports to enhance operational efficiency.

National Scholarship Portal (<https://scholarships.gov.in>)

The National Scholarship Portal serves as a comprehensive platform facilitating student applications, receipt, processing, sanction, and disbursement of various scholarships. As part of the National e-Governance Plan (NeGP), it is a Mission Mode Project implemented centrally for the Department of Education in the Union Territory of Lakshadweep.

GST Accounting and Inventory Package for LCMF

The GST Accounting and Inventory Package for LCMF, available at <https://lcmf.utl.gov.in>, integrates modules for demand management, indenting, work order generation, supply management, dispatch, packing, stock details, and comprehensive reporting. This solution also incorporates an accounting module with integrated GST features to streamline financial operations and compliance for the Lakshadweep Co-operative Marketing Federation (LCMF).

PMAY-G (<https://pmayg.nic.in/>)

The Pradhan Mantri Awas Yojana Grameen (PMAY-G) is a Government of India initiative aimed at providing affordable housing to rural areas. Beneficiaries listed in the Socio-Economic Census receive the housing assistance in three installments. In Kalpeni, Amini, Kadmat, Agatti, and Kavaratti Islands, a total of 45 houses have been granted and constructed under this scheme.

NSAP

The NSAP (National Social Assistance Programme) is a Centrally Sponsored Scheme by the Government of India aimed at providing financial assistance to elderly, widows, and persons with disabilities through social pensions. It ensures support and financial security to vulnerable sections of society.

eHospital

eHospital, available through the e-Hospital@NIC application, serves as a comprehensive Hospital Management Information System (HMIS). It integrates internal workflows and processes within hospitals, providing a unified digital platform connecting patients, healthcare facilities, and medical professionals.

GePNIC (<https://tendersutl.gov.in>)

GePNIC is the eProcurement System of the U.T. Administration of Lakshadweep. It facilitates tenderers to freely download the Tender



▲ Fig 3.4: eHospital team visit Lakshadweep UT Government Hospital to take a comprehensive overview of the application usage at the user site.

Schedule and submit bids online through the portal.

Users can navigate to the 'Latest Active Tenders' link on the homepage to view all tenders hosted on the portal and download the Tender Schedule at no cost. This system is extensively utilized by all departments of UTL for floating and processing tenders efficiently.

eOffice Lakshadweep (<https://eoffice.utl.gov.in>)

The eOffice platform is designed to enhance governance by facilitating efficient and transparent inter and intra-government processes. It aims to achieve simplified, responsive, effective, and transparent operations across all government offices. Built on an Open Architecture, eOffice serves as a reusable framework that can be replicated across different levels of government—from central to district administrations. This integrated system consolidates various independent functions and systems into a unified framework.

▼ Fig 3.5: eHospital implementation discussion



Introduced in Lakshadweep in 2017, the electronic file flow management system initially onboarded six departments. It has since been migrated and hosted on RailTel DC, now operational across all departments at the UT headquarters in Kavaratti.

NFSA Portal

The NFSA Portal aims to modernize and computerize Targeted Public Distribution System (TPDS) operations nationwide, addressing challenges such as food-grain leakages, fake ration cards, inclusion errors, and lack of transparency. This initiative, led by States/UTs with support from the Government of India, includes digitizing ration cards and beneficiary databases, computerizing supply-chain management, establishing a Transparency Portal, and implementing grievance redressal mechanisms. It is part of a comprehensive effort to enhance TPDS efficiency and accountability during the 12th Five Year Plan (2012-17).



▲ Fig 3.6: Digitization awareness session on NIC services at NIC Lakshadweep UT Centre.

Smart City Utility Mapping

(<https://smartcitygis.utl.gov.in>)

Smart City Utility Mapping provides detailed visualizations of buried infrastructure such as sewers, electric cables, telecom cables, gas mains, and water mains. These maps are essential for effective land-use planning, road and utility maintenance, emergency management, infrastructure assessment, development, and property management. By enhancing citizen engagement, these visualizations aim to improve quality of life and enhance the overall functionality of the city.

BAS

(<https://adminlut.attendance.gov.in>)

The Biometric Attendance System (BAS) facilitates seamless attendance management for employees by utilizing biometric authentication (fingerprint/iris) through dedicated biometric devices. The system verifies attendance online using Aadhaar-linked biometric data stored in the Unique Identification Authority of India (UIDAI). Currently operational in 32 departments

in Kavaratti, BAS is slated for implementation across all UT administration offices throughout the Lakshadweep islands. This initiative aims to enhance efficiency and transparency in employee attendance monitoring across the region.

SPARROW

(<https://sparrow.eoffice.gov.in>)

SPARROW (Smart Performance Appraisal Report Recording Online Window) is an online system designed for maintaining comprehensive performance appraisal dossiers for members of the Service within State and Central Governments. Its primary objective is to enable officers to electronically fill Performance Appraisal Reports (PAR) conveniently from any location and at any time. This user-friendly system supports officers at various workflow levels, ensuring efficient filling and submission processes. SPARROW is anticipated to minimize delays in the submission of fully completed APARs, enhancing overall efficiency in performance appraisal management.

BHAVISHYA

(<https://bhavishya.nic.in>)

BHAVISHYA is a central application designed to facilitate the timely delivery of retirement dues and pension payment orders to retiring employees on their retirement day. It provides online tracking of the pension sanction and payment processes, ensuring complete transparency throughout. The UT of Lakshadweep Administration is also integrated into the Bhavishya system, enhancing efficiency in pension management and delivery.

Randomization of Polling personnel and counting officials

NIC Lakshadweep extends its full support to the Election department in randomizing polling officials and counting officials during general elections. It is conducted in 3 stages for both polling personnel and counting officials. Necessary reports, ID cards and appointment orders are generated.

eGranthalaya

eGranthalaya 4.0, a library automation software, has been implemented by the Art and Culture Department in the Public Library of Kavaratti. Following its successful launch, the software is set to expand to nine other libraries across the islands. This initiative aims to enhance in-house activities and member services, creating a connected and efficient library network. With its cloud-ready application, eGranthalaya 4.0 offers a web-based solution with a centralized database, ensuring accessibility and user-friendliness for both library staff and patrons.

Service plus

(<https://serviceonline.gov.in>)

The launch of end-to-end digitization of citizen services in Lakshadweep represents a milestone, facilitated by the introduction of a high-bandwidth network that revolutionizes connectivity across the islands. A total of 182 schemes have been earmarked for digitization, with 9 services already operational on the platform and twenty Direct Benefit Transfer (DBT) schemes configured. This initiative signifies a substantial leap forward in advancing e-governance and improving service delivery for citizens.

Additional Projects

e-MPEDA

The e-mpeda portal, developed by NIC, transforms the Marine Products Development Authority (MPEDA) into an IT-enabled organization, enhancing efficiency through digitalization. This initiative, facilitated by NIC's Lakshadweep Unit in Kochi, involves re-engineering processes and deploying multiple online applications in phases. Ongoing support and maintenance, including updates and security audits as per Government of India guidelines, ensure robust operation on the CLOUD platform.

Key Applications under e-mpeda:

▼ Fig 3.7: Spices Board - FAS inauguration





▲ Fig 3.8: e-Mpeda portal

- Online Registration System
- Online Financial Accounting System
- NRCP Monitoring System (e-NRCP)
- HR System
- Pension System
- Financial Assistance Management System
- Asset Management System
- Online RCMC System
- Online PHT System
- Online Certificate Fee System
- Online Enrollment System for Feed Mill, Hatchery, and Aqua Farms
- API Services of e-MPEDA
- Newsletter Subscription
- Recruitment Module
- Online Export Certificates

SPICES BOARD – PROJECT
(<https://fas.spicesboard.gov.in>)

The Integrated Online Financial Accounting System (FAS) of the Spices Board, developed by the Kochi Unit of the NIC, Lakshadweep, is a sophisticated digital platform aimed at

▼ Fig 3.9: Spices Board - FAS inauguration



enhancing the financial management processes of the Spices Board. This system integrates key financial functions such as budgeting, expenditure tracking, revenue management, and reporting into a centralized online platform.

Key Features:

- **Centralized Financial Management:** Integrates budgeting, expenditure tracking, revenue management, and reporting.
- **Real-time Monitoring:** Allows for real-time monitoring, analysis, and control of financial transactions.
- **Decision Support:** Facilitates efficient decision-making through comprehensive financial data and reports.
- **Chart of Accounts:** Organizes transactions into assets, liabilities, income, and expenses for clarity and accuracy.
- **General Ledger:** Utilizes a double-entry accounting system to maintain organized financial records.
- **Financial Statements:** Generates statements like trial balances and income statements to aid in decision-making.
- **Security Features:** Includes OTP-enabled log-ins, integrated payment gateways, and payment intimations for enhanced security.
- **Communication Channels:** Supports communication via email, SMS, and Sandes for seamless interaction.

Network and Infrastructure Services

Video Conferencing

NIC operates one of the largest High Definition Video Conferencing Networks in India, providing services since 1995. These services are instrumental in monitoring Government Projects, flagship programs of the Prime Minister, various schemes, handling Public Grievances, overseeing Law and Order, conducting RTI case hearings, enabling Distance Education, Tele-Medicine, monitoring Election processes, and launching new initiatives. NIC’s VC services are regularly



▲ Fig 3.10 CSI Nihilent Award for Excellence

utilized by dignitaries including the President of India, Prime Minister, Chief Ministers, Cabinet Secretary, Chief Secretaries, Chief Information Commissioner, Central and State Government Ministers, and Department Officials at all levels nationwide. NIC has established Desktop Video Conferencing facilities (EVCS) in NIC Kavaratti, Kochi, and Minicoy Centre, enhancing communication capabilities across these locations.

Accolades

The e-Government solution implemented for the Department of Electricity, Lakshadweep UT, has been acknowledged as a leading application in the e-Government sector. It played a pivotal role in the department receiving the CSI-Nihilent Award for Best E-Governed Department in 2008. Furthermore, the Online PHT System of e-MPEDA was honored with the CSI Nihilent Award for Excellence in 2013-14.

Way Forward

NIC Lakshadweep UT plays a crucial role in India’s e-governance infrastructure. To strengthen its impact, emphasis can be placed on enhancing cybersecurity measures and cultivating a resilient digital ecosystem. The NICLAK team remains dedicated to advancing this ecosystem by developing user-friendly platforms and facilitating seamless integration with diverse government services. This commitment underscores NIC’s mission to deliver state-of-the-art e-governance solutions that effectively serve both the government and its citizens.

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Cuttack, Odisha

Embracing its Heritage, Empowering with ICT for Digital Governance

Edited by **KAVITA BARKAKOTY**

Cuttack, known as the “Silver City” for its exquisite filigree silver work, is a hub of historical and technological significance. Established in 1988, the NIC Cuttack District Centre has been a pioneer in leveraging technology to support the District Administration and various Central and State Government departments. Serving a district with 3 subdivisions, 15 Tahasils, and 14 blocks, NIC Cuttack has revolutionised e-Governance by implementing advanced ICT solutions.

ICT Initiatives in the District

GRS Recruitment system

An online application was developed for Cuttack District to streamline the recruitment of Gram Rojgar Sevaks (GRS) using the ServicePlus platform. This workflow-based system handles the entire process, from online application submission and acknowledgement to scrutiny by the Program Officer and verification by the Project Director. Draft lists of accepted and rejected candidates are published for public viewing, and final shortlisted candidates receive online intimation letters for the written examination. Successful candidates can download their joining letters through the system. This comprehensive application ensures transparency and efficiency in the GRS recruitment process for Cuttack District.

e-Office

e-Office, a digital workplace solution, has been implemented at Ravenshaw University, Cuttack Municipal Corporation, Directorate of Labour Commissioner, Factories and Boilers, and ESI offices in Cuttack. A capacity-building drive trained officials to enhance operational efficiency and promote digital governance. So far, 3,421 files have been created, 41,307 e-files moved, 15,147 receipts created, and 253,691 e-receipts processed.



Itishree Nanda
Technical Director & DIO
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Harnessing cutting-edge technology, the NIC Cuttack District Centre has developed numerous citizen-centric services, enhancing the efficiency and responsiveness of the district administration. From digital land records to e-Office initiatives, NIC Cuttack addresses diverse socio-economic needs, ensuring timely and transparent service delivery. This tech-driven approach not only honours Cuttack’s rich heritage, but also propels the district into a future-ready era.

eAbakari

e-Abakari streamlines excise services for offices, licensees, administrative departments, and stakeholders through a workflow-based system. The e-Lottery module conducted online lotteries for Country Liquor (ENA) and premium IMFL ‘OFF’ shops for 2023, enhancing transparency and efficiency in liquor licence allocation.

eDistrict

All the services including Residence Certificate, Caste Certificate, Income Certificate, Legal Heir Certificate, etc. developed under e-District application through ServicePlus platform are running successfully for Cuttack District. So far 12,80,399 out of 13,05,148 applications have been processed successfully.

iRAD

iRAD has been successfully implemented

across 40 police stations (urban and rural), five private hospitals, one government hospital, three highway departments, and one RTO office. The project included 18 training sessions, training 185 officials. A total of 150 users have been created, and 1202 road accident cases have been registered in iRAD.

DAMPS

Disaster Assistance Monitoring & Payment System (DAMPS) has been an important and efficient tool for Disaster Management Authorities for disbursement of ex-gratia assistance to the next of kins of disaster affected victims. In Cuttack district, Rs. 24,85,43,341/- has been disbursed to 667 victims of incidents like Boat Capsize, Drowning, Fire, Heat-Wave, Lightning, and Snakebite

ODRN

ODRN (<https://odrn.nic.in>) is a Web-GIS application facilitating Disaster Management Plan preparation at all levels. It enables administrations to mobilize resources effectively for disaster management and mitigation.

e-Panchayat Sabha

e-Panchayat Sabha streamlines meeting processes at the Gram Panchayat level. It manages end-to-end meeting activities from scheduling to dispatching minutes. Since its launch on 5th March, 2023, nearly all Gram Panchayats have adopted the application, enhancing governance performance through improved monitoring and implementation of development schemes and welfare measures.

E-Governance Projects in Revenue Sectors

The District Centre ensures technical support for effective implementation of LRMS for online mutation and RoR preparation, BhuNaksha for map-based mutation, RCCMS for revenue case monitoring, ETL for tenant ledger updates, e-Pauti for online revenue payments, DWIST for Tahasil websites, DMS for record rooms, and Revenue Dashboard for decision-making across State, District, Sub-Division, and Tehasil levels.

RDC Central Division Website Development

NIC Cuttack designed, developed, and hosted



▲ Fig 4.1 : Dr. Suresh Chandra Dalai, IAS, RDC (Central Division), Cuttack inaugurating NIC Pavilion at Cuttack Baliyatra Utsav

the bilingual RDC (CD) website on the S3WaaS platform. It meets GIGW standards and holds STQC certification. The site disseminates citizen-centric information, including cause lists for Court of the RDC(CD) and Court of the Secretary. Integrated social media features like Facebook and Twitter enhance its reach and visibility.

VBSY Campaign

The VBSY monitoring software was implemented across all 14 blocks with the help of CDPO cum EO, Zilla Parishad, and BDOs. The application was monitored and coordinated with the Government of India. Workshops, meetings, and training sessions were held for PDs, DRDA officials, Program Officers, CPs, BDOs, and ABDOs to ensure successful implementation and media transmission to the web portal. ICT support was provided to CDO cum EO, GP, Urban Local Bodies, and central government organizations to effectively support the VBSY campaign.

Simultaneous General Election 2024

The District Informatics Officer (DIO) oversaw critical IT applications during the Simultaneous General Election-2024. These included PPMS, EMS, ENCORE, cVIGIL, ESMS, ETPBMS, ERO NET, OEVTs, and Daily Law & Order Reporting. Proactive cyber-

security measures were implemented to educate election officials and stakeholders on cybersecurity hygiene and vulnerabilities.

Video Conferencing Support

NIC Cuttack provided ICT support for the PMO Camp office during the visit of the Hon'ble Prime Minister at the Baliyatra ground. Services included videoconferencing and network connectivity for the High Court of Orissa, RDC (Central Division), Choudwar Circle Jail, NALSA, SALSA, and others. Support extended to video conferences under the Vikshit Bharat Sankalp Yatra initiative as well.

Important Events Organised

Cuttack Baliyatra Utsav

The historic Cuttack Baliyatra Utsav-2023, held from 27th November to 5th December, featured the NIC Pavilion showcasing citizen-centric e-Governance services. Inaugurated by Dr. Suresh Chandra Dalai, IAS, the pavilion highlighted essential services, cyber security, and e-payment precautions through standees, PPTs, videos, and leaflets. Citizens could access services like ROR and apply for DL on-site. A quiz on e-governance with token prizes was organized. The event concluded with officials receiving mementos and certificates from

NIC Cuttack has been extending excellent support to Cuttack District Administration in various e-Governance applications.

I appreciate the IT Intervention and Support of Smt. Itishree Nanda (DIO, NIC) in Simultaneous General Elections-2024 to Lok Sabha and Odisha Legislative Assembly where as the IT Nodal Officer of the district and her team has carried out almost all applications developed by ECI, NIC and CEO, Odisha for free, fair and peaceful General Election-2024 in the district.

The role of DIO is praise worthy in every application like PPMS, EMS, ENCORE, cVIGIL, ESMS, ETPBMS, ERO NET, OEVTs, Daily Law & Order Reporting on Electoral events. DIO, NIC has taken proactive measures to educate and raise awareness among election officials and other stakeholders about the potential vulnerabilities and the importance of cyber security hygiene, including the looming threat of cyber-attacks.

The National Informatics Centre (NIC) stands at the forefront of leveraging IT interventions to support electoral systems, amplified by its crucial role in the Simultaneous General Elections-2024.

I wish all the best to NIC in its endeavour.



Arindam Dakua IAS
Collector & District Magistrate
Cuttack District

Shri Narahari Sethy, then Collector and District Magistrate, and Shri Umakanta Raj, ADM (Revenue), Cuttack.

Way Ahead

The NIC District Unit in Cuttack is dedicated to meeting the needs and expectations of the district administration and other local establishments with the highest level of commitment. Continuously evolving, it will leverage emerging technologies in improving service delivery and fostering citizen engagement.

Contact for more details

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▼ Fig 4.2 : Cuttack DIO, Smt. Itishree Nanda, being felicitated by the then Collector, Shri Narahari Sethy

Patiala, Punjab

Speeding up e-Governance through ICT-enabled initiatives

Edited by **VINOD KUMAR GARG**



Patiala, a historic city in Punjab's Malwa region and known as a mini capital due to its various state headquarters, is making strides in the digital arena. NIC District Centre Patiala is the core to this transformation, providing essential technical support for a range of digital projects and initiatives. Under the guidance of the SIO NIC Punjab, the centre significantly aids the District Administration in implementing and managing e-Governance and ICT solutions for enhancing the delivery of technology-driven services to citizens.

ICT Initiatives in the District

Elections

NIC Patiala has consistently played a crucial role in Assembly, Lok Sabha, Local Bodies and PRIs elections. The NextGen DISE initiative, implemented by NIC Punjab, includes:

- Polling Personnel Management System: A web-based application for digitizing data, importing Data from iHRMS/APIs/Excel/CSV, and randomly deploying polling staff with a distributed architecture for state-wide replication.
- Polling Activity Monitoring System (PAMS): A web portal and mobile app that captures and monitors key election events in real-time, including pre-poll, during poll, and post-poll activities, with dashboards for ROs, DEOs, and CEOs.
- Voter's Queue Information System (QIS): Provides real-time queue information to voters via WhatsApp, allowing them to check queue lengths by Location or Booth Number, facilitating timely visits to polling stations.



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Patiala, renowned for its rich history and popularity as a destination in Punjab, has also made significant advances in technology. NIC Patiala District Centre, established in 1988, has been pivotal in promoting ICT initiatives within the district. This Centre plays a crucial role in advancing technology-driven solutions and enhancing the delivery of digital services to citizens.

During elections, DIO Patiala also serves as, supporting all ECI IT applications, including ENCORE, cVIGIL, and webcasting.

NextGen eHospital

NIC's eHospital project aims to enhance healthcare delivery nationwide. This cloud-based Hospital Management Information System digitizes hospital workflows and processes. Implemented at Government Rajindra Hospital Patiala (Punjab's largest government hospital) on April 1, 2024, the project established a LAN of 165 nodes with NKN connectivity. A dedicated project management unit with two trained staff ensures smooth operation. The OPD Registration modules are active across all hospital blocks, and Billing module is under implementation.

NGDRS

Under the Digital India Programme, Punjab's State Revenue Department launched the National Generic Document Registration System (NGDRS), a NIC initiative. Inaugurated by the Hon'ble CM Punjab, NGDRS has been fully adopted across all 8 SROs/JSROs offices in the district.

iHRMS

The iHRMS has been successfully implemented across all state government departments and offices in the district of Patiala. Training was provided to Nodal Officers and 900 Master Trainers. Modules for service books, pay bills, annual increments, GPF, and external manpower are fully operational. iHRMS has also been extended to Boards, Corporations, and Universities, including the Punjab Pollution Control Board, Punjabi University, and all local bodies in Patiala. It is currently being implemented at the Punjab State Power Corporation Limited Head Office in Patiala.

NextGen IFMS

The Integrated Finance Management System (NextGen IFMS), developed by NIC, is a key project of the Government of Punjab, managed by the Finance and Treasury Departments. This comprehensive suite of applications supports planning, budgeting, expenditure control, receipt processing, bill management, payment processing, debt management, and auditing. The state-of-the-art portal integrates stakeholders such as the Department of Finance, Treasuries, Administrative Departments, Accountant General, RBI, and Banks into a unified platform with role-based Smart Dashboards. These dashboards enhance decision-making and ensure end-to-end integration of various IT systems for efficient fund management and accounting.

Patiala District Website

NIC Patiala regularly updates and maintains the district's website (<https://patiala.nic.in>), ensuring it adheres to GIGW standards and robust security on the S3WaaS platform. The revamped site features enhanced user-friendly functionalities and interfaces.

Other Key Initiatives in the District

DM-Dashboard

The DM Dashboard (<https://pb.dmdashboard.nic.in>) offers an analytical overview of projects, providing District Administration with insights into various departmental activities and monitoring schemes at the district level. Patiala was the first district in the state to launch the DM Dashboard.

NIC Patiala has been pivotal in advancing



▲ Fig 5.1 : DIO Patiala was awarded by the Hon'ble Ex CM Punjab Capt. Amarinder Singh on Republic Day for his outstanding services in the IT sector

digital infrastructure in the region. The Revenue Court Management System (RCMS) manages and monitors court cases for Revenue Officers across all Patiala Revenue Courts. The National Database of Arms Licenses (NDAL) digitizes Arms Licenses into a centralized repository with unique IDs for holders. The Integrated Road Accident Database (IRAD), funded by the World Bank and initiated by MoRTH, enhances road safety with input from various stakeholders. The ePrison Application Suite, including the Prisoner Information Management System (PIMS) and Visitor Information Management System (VIMS), operates in Patiala and New Nabha jails with LAN and video conferencing facilities. The Viksit Bharat Sankalp Yatra Portal supports nationwide scheme saturation efforts. eOffice is fully implemented and operational across all branches of the Deputy Commissioner office and government field offices in Patiala, streamlining receipt and file movement. eServices introduced this year include online applications for NRI document embossing, electricity duty exemption, uncontested land mutation, and farmer training for milk plant setup. Additionally, the Online National Permit project, a pilot by NIC MORTH, was successfully launched at RTO Patiala.

Digital India Activities

NIC Patiala enhances computer awareness and provides training for effective use of government

facilities through regular workshops, programs, and multimedia presentations. It is also featured in the informative talk shows on All India Radio Patiala and Doordarshan Jalandhar under the Digital India Program.

Important Events Organised

As the IT Nodal Agency, NIC Patiala supports state-level functions and high-profile visits by the Hon'ble PM, Cabinet Ministers, and the CM of Punjab by setting up IT and Media Control Rooms for events such as PM Visits, Rozgar Melas, Viksit Bharat Yatra, and CM Punjab's Sarkar Vapaar Milni. NIC Patiala also participated in the Digital India Week at Gandhinagar, Gujarat, with beneficiaries of central schemes.

Accolades

- NIC Patiala was honored by the then Hon'ble CM Punjab, Capt. Amarinder Singh, on Republic Day for its exceptional contributions and outstanding services in the IT sector.
- At the national level, NIC Patiala received an award from the Hon'ble Minister of Electronics and IT, Government of India, as one of the top-performing districts under the Digital India campaign on Good Governance Day.
- NIC Patiala was recognized by various Deputy Commissioners of Patiala for its technical support

It gives me immense pleasure that Patiala district has been chosen for District Informatics category in the Informatics Publication. The state-of-the-art technology, latest ICT infrastructure of NIC Patiala District Centre along with its sincere, 25, hardworking staff are key assets of the District Administration. The information, data and technical expertise with innovative ideas have always played a key role in better planning and decision making in order to deliver public services seamlessly. The keenness and proactive support from NIC officials to rollout various e-Governance projects, sharing of Government information through the District Website and active support during General Elections have been quite commendable.

NIC Patiala is supporting District Administration in many ways to achieve the goal by extending its services like software solutions, eGovernance services, ICT Infrastructure, Video Conferencing and technical consultation.

I wish them success in their future endeavours.



Showkat Ahmad Parray IAS
Dy. Commissioner, Patiala

in the successful conduct of Assembly Elections, Lok Sabha Elections, local body elections, and PRI elections.

Way Forward

NIC Punjab's new initiative, Digital MC House (eNigam), is currently being implemented in the Municipal Corporation of Patiala. This initiative aims to enhance digital services within the corporation. Additionally, the NextGen eHospital Project is set to expand with the upcoming launch of its Billing, IPD, and eBlood Bank modules. NIC Patiala remains committed to delivering comprehensive ICT support to the District Administration and various state and central government field offices throughout the district.

Contact for more details

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▼ Fig 5.2 : DIO NIC Patiala providing demonstration of election software to General Observers of ECI, DEO, ADEO during General Lok Sabha Election 2024

South Goa District

Sun, Sand and Seamless Systems

Edited by **SUSHMA MISHRA**

Goa attained statehood on May 30, 1987, when it was included as twenty-fifth state of India. The State of Goa has two districts namely North Goa, which is headquartered at Panaji and South Goa, which is headquartered at Margao. South Goa District covers the entire southern part of Goa state. South Goa District is famous for its natural beaches, temples, water falls, hill spots, paddy fields and coconut groves. It is flanked by the Arabian Sea on the west, North Goa district to the North and Uttar Kannada district of Karnataka in the East and South.

NIC South Goa District Centre was established in 1989 and since then, it has been instrumental in fostering an ICT culture throughout the district. It has implemented a number of e-Governance projects and helped the District Administration to provide better service to citizens.

ICT Initiatives in the District

District Website

<https://southgoa.nic.in>

The district website of South Goa is built on the S3WaaS platform. The website is designed for dissemination of information regarding citizen services, tourist places, public utilities, etc. based on inputs from district administration and is regularly updated. The website has become a one stop destination for all information about the District and administration.



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NIC South Goa District Office has been supporting the District Administration with various ICT initiatives since its inception by in house development and implementation of systems such as FRC Information System, Manual Form I & XIV Information System, Matriz Information System, Integrated Public Distribution System, ICT solution for Urban Local Bodies, Online issuance of Birth & Death certificates, etc. NIC South Goa has also been providing all possible technical assistance and training for various Central and State e-Governance project their for successful implementation.



Elections

<https://esmsg.goa.gov.in/sg>

NIC South Goa District Centre provides extensive support to the District Administration towards the conduct of Parliament and Assembly elections. The web based application developed by the NIC South Goa District Centre is used for collecting data of officials employed in the various Central/State Govt. offices, banks, PSUs etc. and is used for the randomization of Polling Officials, Micro Observers and Counting Officials. NIC District Centre provides technical support during various stages of the election process. Support for randomization of police personnel is also provided on request.

Forests Rights Claim (FRC) Information System

<https://sgservices.goa.gov.in/frcsanad>

Forests Rights Claim (FRC) Information System has been implemented in South Goa District of Goa to digitize the manually issued Forests Rights Claim Sanad documents. The Sanad document issues forest land rights to citizens. The portal was launched by the Hon'ble Chief Minister Dr. Pramod Sawant on 24/09/2022. Two web applications are developed, one for data entry and another one is a public interface for searching records. The data entry is done at the Collectorate and the scanned document is uploaded on to the system with related details. Using the public interface citizens can search the Sanad document.

Manual Form I & XIV Web Application

<https://sgservices.goa.gov.in/form>

The Manual Form I & XIV Information System has been implemented in South Goa District of Goa to digitize the manual Form I & XIV Documents. Before the computerization of Land records, manual registers were maintained by Government of Goa to record land details. After computerization of Land records, digitization of old registers was required and hence this system is developed. Two web applications are developed, one for data entry and another one is a public interface for searching records. The data entry is done at the taluka level and the scanned document is uploaded to the system with related details. Using the public interface citizens can search for the document.

Matriz Records

<https://matrizsg.goa.gov.in/matriz>

Matriz Records Search System has been implemented in South Goa District of Goa to digitize the manual Matriz Registers. During the Portuguese era, land records were maintained in Matriz Books, these records required to be digitized hence this web application is developed. Two web applications are developed, one for data entry and another one is a public interface for searching records. The data entry is done at taluka level and the scanned document is uploaded to the system with related details. Using the public interface, citizens can search the document.

Monthly Reports Web Application

This application is developed for the feeding count of pending revenue cases under different sections and acts under Collectorate and its sub offices in every talukas every month and for generating reports for higher officials for monitoring pendency cases.

Control Room Complaints Application

This application registers complaints coming to the Control Room of South Goa Collectorate and Taluka offices. An operator in the control room feeds the basic details and complaints into the system and marks its status on resolution. Higher authorities can track pending complaints. This application was developed to streamline the disaster management efforts.

Other Key Initiatives in the District

eOffice

The District Centre has successfully provided all the support for implementing eOffice in South Goa Collectorate in the year 2023. All the necessary coordination for creating email id, preparing master files and training were given.

ICT Support for PMO during the Hon'ble PMs Visit

During the Visit of Hon'ble Prime Minister of India during the year 2022-2024 to the South Goa district for various functions, NIC District Centre has provided all possible ICT support to the PMO.

Viksit Bharat Sankalp Yatra

The Viksit Bharat Sankalp Yatra (VBSY) in all Panchayats within the district is a concerted effort to promote government programs. The District Centre has provided all the necessary technical support for creating user credentials, helping in mapping routes and troubleshooting issues to ensure their success.

- ▼ Fig 6.1 : Former Hon'ble Chief Minister of Goa, Shri Manohar Panikar, Urban Development Minister, Shri Francis D'Souza, Secretary, Urban Development, Shri Sudhir Mahajan, Director, Municipal Administration, Smt. R. Menaka, and other officials during the launch of Urban Local Bodies



Video Conferencing (VC) Services

The District Centre provides VC Support for District Administration and other departments through the VC Studio.

NDAL/ALIS

Arms License online is a web based application, which is developed to facilitate arms license related services to the general public, where applicants can apply for Fresh arms license and subsequent allied services for different categories like manufacturer, individual etc.

ICT Solution for Urban Local Bodies in the State of Goa

Citizens living in urban areas have access to a suite of about 20 services which are made available on the Urban Local Bodies portal <https://go-aulbservice.gov.in>. The portal also disseminates ULB specific information such as list of elected representatives, important contact details of staff, tax defaulters, active tenders & notifications, council meetings & events and many more.

Integrated Management of Public Distribution System (IMPDS)

Under IMPDS scheme, the eligible ration card beneficiaries covered under National Food Security Act (NFSA) can lift their entitled foodgrains from any Fair Price Shop (FPS) of their choice anywhere in the country, by using their biometric or Aadhaar authentication on electronic Point of Sale (ePoS) device at the FPS. IMPDS has been implemented in the State of Goa and on an average, around 10000 ration card holders per month from other states have been able to avail this scheme under the banner of 'One Nation, One Ration Card' (ONORC).

Online issuance of Birth and Death Certificates

The Department of Planning, Statistics & Eval-

District Administration, South Goa extends its sincere appreciation to the National Informatics Centre (NIC) team for their excellent work in modernizing our district's administrative infrastructure. The team's dedication to implementing all the network systems has been promoting transparency and efficiency of our day-to-day operations. The seamless integration of this system has not only streamlined our processes but also enhanced accountability, ensuring that our services are delivered promptly and effectively to the citizens we serve.

Your efforts have provided our community with a user-friendly platform for accessing information and engaging with the local government, fostering transparency and trust.

Thank you for your unwavering commitment to excellence and for your invaluable contributions to our district's progress and development.



Asvin Chandru A. IAS
District Magistrate & Collector
South Goa District

uation (DPSE) functions as the Office of the Chief Registrar of Births & Deaths for Registration of Births & Deaths Act 1969. Presently, the registration of Birth and Death instances are being recorded using the Municipal Administration Software (MAS) at all the Urban Local Bodies and InfoGram Software Application at all Village Panchayats. Also, digitally signed birth and death certificates can be downloaded from the <https://rbd.goa.gov.in>, portal.

Way Forward

Keeping up with the latest technological advancements, NIC South Goa aims to introduce and implement innovative e-Governance solutions to facilitate good governance and efficient service delivery.

Contact for more details

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Room No 329, 3rd Floor, Matanhy Saldanha
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Tiruvannamalai, Tamil Nadu

Explorer in e-Governance

Edited by **NISSY GEORGE**

Since 1989, NIC Tiruvannamalai has been integral to the district administration of Tiruvannamalai, advancing ICT and e-Governance initiatives in this historic hill town. The District Centre has significantly enhanced governance by ensuring the efficient and timely delivery of public services, bringing governance closer to the people.

ICT Initiatives in the District

Integration of FMB Maps with TamilNilam

Tiruvannamalai has been chosen as a state-level pilot district for integrating Field Measurement Sketch (FMB) maps with TamilNilam, enabling online mutation of land records. This system allows surveyors to update survey maps and perform online mutations seamlessly. Key features include:

- Acceptance of online applications from Sub Registrar Offices and citizens.
- Cadastral map updates via the Web CollabLand module.
- Online mutation processing through TamilNilam.
- Online availability of Record of Rights (ROR) and Field Measurement Sketches (FMS).

Karthigai Deepam Hill Climbing e-Pass application

The Karthigai Deepam Hill Climbing e-Pass application in Tiruvannamalai facilitates the distribution of e-Passes to devotees gathering to climb Annamalai hill during the annual Karthigai Deepam festival. This festival, known for its lighting of the Thiruvannamalai Maha Deepam, attracts over 3 million devotees to the 2668 feet high holy mountain. Only 2500 people are permitted to climb the hill on a first-come, first-served basis.

The application includes a mobile platform for



Cecil Elango. A
Technical Director & DIO
ac.elango@nic.in



NIC Tiruvannamalai pioneers district governance with innovative ICT solutions, significantly enhancing administrative efficiency and citizen services. Through comprehensive Government-to-Citizen (G2C) applications, it sets new standards in digital governance, ensuring seamless and effective access to essential services and information for all residents of Tiruvannamalai.



capturing individual details and a web interface for generating and issuing e-Passes with photos and QR codes. At the climbing site, e-Passes are verified using the mobile application in both online and offline modes.

e-Taxation

The e-Taxation Project is a web-based application implemented by the Directorate of Town Panchayat and Rural Development, and Panchayat Raj Department for tax collection purposes. It encompasses modules for Property Tax, Water Charges, Profession Tax, Non-Tax, and Trade License. Key features include customizable Masters and Business Logic at the local Panchayat level, handling service requests through customizable workflow methodologies.

The system automates Demand Generation and offers bilingual reporting capabilities. Successfully deployed across all 865 village Panchayats and 10 town Panchayats in Tiruvannamalai District, this project ensures efficient tax administration.

Arulmigu Arunachaleswarar Temple e-services

The Arulmigu Arunachaleswarar Temple, nes-

tled at the base of a 2668 feet high hill in Tiruvannamalai, is a revered site drawing hundreds of thousands of devotees annually. Supported by the HR&CE department in collaboration with NIC, the temple offers various e-services including:

- Collection of donations through POS and online platforms.
- Booking services for temple tickets, Poojas, and more.
- Website and mobile application services for visitor convenience.

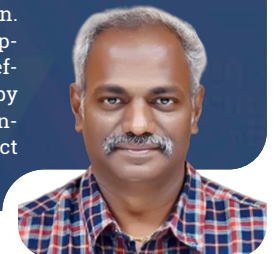
Other Key Initiatives in the District

Here are some key initiatives and innovations implemented in Tiruvannamalai District:

Land Records

The implementation of TamilNilam Rural, Ur-

NIC Tiruvannamalai, is an imperative part of the District Administration, driving ICT and e-Governance initiatives. It has played a crucial role in bringing governance closer to the people by ensuring prompt, effective and timely delivery of public services. Tiruvannamalai district is at the forefront of implementing Land Records and Rural Development e-Governance projects. 1st district in the country to conduct online examination to the school students during early covid 19 pandemic. The proactive participation of NIC has resulted in effective use of ICT in District Administration. I sincerely appreciate to efforts put in by the NIC Tiruvannamalai district centre.



D. Baskara Pandiany IAS
District Collector, Tiruvannamalai



▲ Fig 7.1 : Shri D. Baskara Pandian, IAS, District Collector, Tiruvannamalai addressing the district officials during training of integration of FMB with TamilNilam.

ban, and WebCollabLand projects across all Taluks aims to modernize and digitize land records management, ensuring accurate and accessible land data for residents and administrators.

Rural Development and Panchayat Raj

Various Central and State schemes are executed annually, monitored and implemented through the TNRD Portal. This ensures effective rural development, improving infrastructure and quality of life in rural areas.

Online Examination System

The OESNIC system is customized for conducting online tests for students from Classes VI to X, with over 50,000 participants benefiting district-wide from these digital learning initiatives, enhancing educational standards and accessibility.

Transport Projects

Services like Vahan, Sarathi, eChallan, and mParivahan have been rolled out in all RTOs across Tiruvannamalai district. These initiatives enhance efficiency in transport management and service delivery, streamlining processes for citizens.

Integrated Court Case Monitoring System

This system enables the District Administration

to monitor pending court cases, improving transparency and efficiency in the judicial process, ensuring timely justice delivery.

e-Office

The successful implementation of e-Office at Collectorate Tiruvannamalai promotes paperless governance and administrative efficiency, streamlining office operations and reducing paperwork.

Social Security Schemes

Support is provided to over 250,000 beneficiaries through various social security schemes, ensuring welfare and support for vulnerable groups, contributing to social equity and stability.

PM Kisan

Assistance is extended to more than 300,000 beneficiaries under the PM Kisan project, enhancing agricultural productivity and farmer income in the district, fostering economic growth and sustainability in the agricultural sector.

ICT Support Provided

Elections

NIC Tiruvannamalai provides robust technical support to the district administration for Lok Sabha, Assembly, and local body elections. This

ensures smooth and transparent electoral processes, enhancing voter confidence and upholding democratic principles.

VC Services

Video Conference services have been extended to cover the Central Information Commission (CIC), State Information Commission (SIC), and various Central and State Government Departments. This enhancement facilitates efficient communication, collaboration, decision-making, and coordination across multiple governmental levels.

Awards

The District Centre has been awarded:

- Independence Day awards in 2019, 2021, and 2022.
- Republic Day awards in 2018, 2020, and 2021 by the District Collector.

NIC Tiruvannamalai District Centre is providing continuous support in implementation of various IT related projects in our District especially in Land records pilot projects. We are very proud that many of our district projects are escalated to state level for implementation across the state. I am hopeful that NIC will continue to spread IT awareness to actively support the e-Governance initiatives of the District Administration. I want to thank NIC Tiruvannamalai for their support and cooperation in implementing various e-Governance initiatives in the district. I wish the NIC the very best in their future endeavours



Dr. M. Priyadharshini IAS
District District Revenue Officer
Tiruvannamala

Way Forward

NIC Tiruvannamalai is committed to providing the District Administration and citizens with superior ICT services by harnessing the potential of recent technological advancements. It is actively developing various Government-to-Citizen (G2C) applications aimed at delivering enhanced services across the district.

Contact for more details

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NIC, Collectorate, Tiruvannamalai, Tamil Nadu – 606604
Email: dio-tvn@nic.in, Phone: 04175-232205



▼ Fig 7.2 : Shri E.V.Velu, Hon'ble Minister visited NIC Centre during Online examination for school students

National Workshop on 'Powering Transformation through UI/UX for Digital Governance

On May 28th, 2024, the Ministry of Electronics and Information Technology (MeitY) hosted a significant National Workshop on 'Powering Transformation through UI/UX for Digital Governance.' This event aimed to establish comprehensive guidelines for enhancing the user experience (UX) and user interface (UI) of government websites, portals, and applications. Recognizing the rapid evolution of the digital landscape and the growing demand for seamless and intuitive interactions, the workshop brought together stakeholders from government, industry, design, and development. The objective was to discuss best practices and address challenges in creating effective public-facing digital services.



Chaired by Shri Amit Agarwal, CEO of UIDAI and Director General of NIC, the workshop featured panel discussions on: Best UX Practices, Role of UI/UX in Citizen Engagement with the Government, Tools & Techniques for UX/UI Practices and Aspirations and Experiences of Citizens in the Social Domain.

In his opening remarks, Shri Agarwal emphasized the critical role of UX/UI in modern digital governance. "The user experience is at the heart of our digital transformation journey. By prioritizing intuitive design and seamless interaction, we can significantly improve citizen engagement and satisfaction



with government services,” he stated. He also highlighted the importance of collaboration between government and industry to achieve these goals, noting that “innovation thrives when we work together, sharing insights and best practices.”

A notable highlight of the workshop was the signing of a Memorandum of Understanding (MoU) between the Ministry of External Affairs (MEA), MeitY, and Common Service Centres, marking a collaborative effort to enhance the UI/UX of government digital services.

The event also featured exhibitions by leading industries such as Google,



Microsoft, Map My India, SBI, ZOHO, and Samsung, showcasing their latest innovations in UX/UI.

Praised by industry leaders and government officials alike, the workshop concluded with a strong commitment to enhancing the UI/UX of government websites and applications. This reflects

the Government of India’s dedication to improving digital governance and citizen engagement. By focusing on UX/UI, the workshop underscored the importance of user-centric design in the digital transformation of government services, ensuring that public digital services are not only functional but also user-friendly

and accessible to all.

As Shri Agarwal aptly noted, “Our goal is to create digital experiences that are as intuitive and efficient as the best in the private sector. By doing so, we not only meet but exceed the expectations of our citizens, fostering a more engaged and empowered society.”



Behind the Scenes

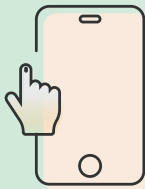
How NIC State Centres Powered India's 2024 Elections

In India's vibrant democracy, the 2024 General Elections were a massive undertaking. Behind the scenes, NIC played a vital role, serving as the technological backbone to ensure the process was smooth, transparent, and efficient. Collaborating closely with the Election Commission of India (ECI), NIC State and District Centres brought digital innovation to the electoral process, upholding the nation's democratic values.

Key Applications Deployed

cVIGIL

It empowers citizens to uphold election integrity by enabling real-time reporting of Model Code of Conduct violations, turning voters into vigilant guardians of democracy and ensuring swift action against misconduct.



ENCORE



It streamlined the monumental task of election logistics in India by coordinating communication and tracking materials, vehicles, and personnel, ensuring smooth and efficient resource deployment.

ETPBMS

ETPBMS enabled secure remote voting for service voters, ensuring their voices were heard and their votes counted, no matter where they were stationed.



ESMS

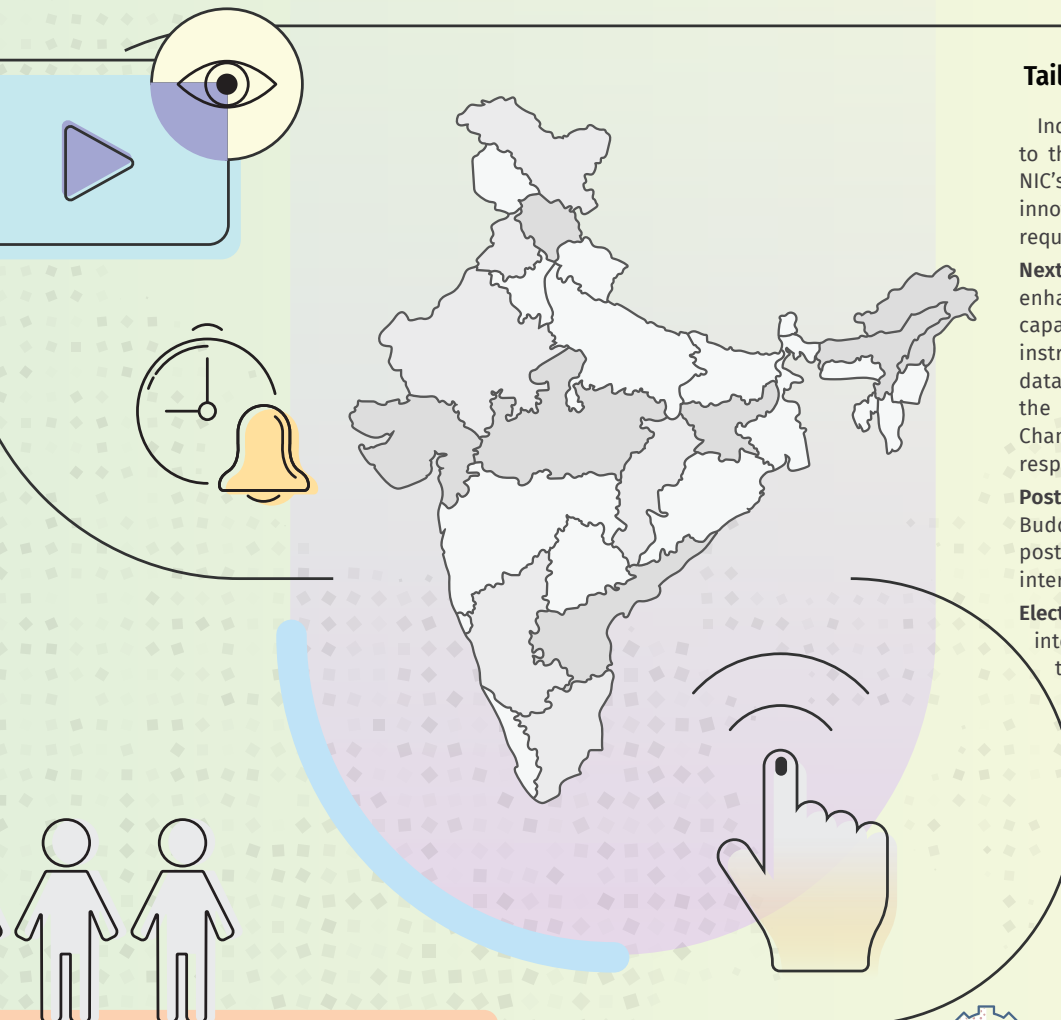


This application ensured a safe and secure election by providing real-time tracking and swift responses to any concerns throughout the process.

Services and Technical Support

- Efficient deployment of polling personnel, micro observers, and counting staff. Training Management
- Comprehensive training management for election personnel
- QR code-based attendance marking to reduce discrepancies
- Smooth handling of postal ballots and Election Duty Certificates (EDCs)
- Monitoring election expenditure for compliance
- Technical consultancy for digital solutions
- Webcast monitoring for enhanced transparency
- Real-time dashboards and unbiased personnel randomization
- Accurate poll percentage estimation and timely result declaration
- Efficient grievance management through a complaint system





Tailored Solutions for Every State

India's diversity extends beyond culture and language to the specific needs of each state during elections. NIC's state units rose to the occasion, developing innovative applications tailored to meet these unique requirements.

NextGen DISE: Developed by NIC Punjab, this system enhanced the data integration and management capabilities of the electoral process. It was instrumental in ensuring accurate voter registration, data management, and real-time updates during the election. The system was also deployed by NIC Chandigarh and NIC Himachal Pradesh in their respective states.

Postal Buddy: An initiative by NIC Rajasthan, Postal Buddy provided an intuitive platform for managing the postal voting process, offering voters a user-friendly interface for tracking and managing their ballots.

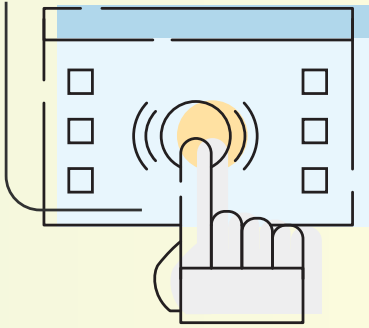
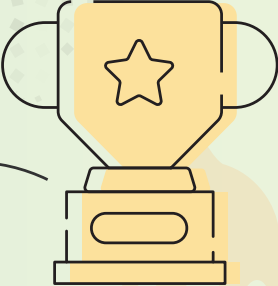
Election Quiz: NIC Himachal Pradesh launched this interactive application to engage citizens, particularly the youth, in the electoral process. The quiz aimed to educate and inform participants about the election process, fostering greater civic awareness.

Odisha Election Vehicle Tracking System: NIC Odisha's vehicle tracking system provided real-time tracking of election vehicles, ensuring the timely deployment of resources and personnel across the state. This system played a crucial role in maintaining logistical efficiency throughout the election period.

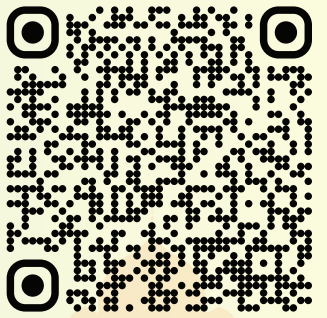


Recognition and Awards

NIC's state and district centers played a pivotal role in the Lok Sabha 2024 elections, earning widespread acclaim for their exceptional IT contributions. Centers like NIC Sikkim, NIC West Bengal, NIC Bihar, NIC Tripura, NIC Puducherry, NIC Assam, NIC Punjab and NIC Haryana were recognized by their respective State Administrations for their innovative approaches to voter registration, data management, and result dissemination. These initiatives not only garnered awards and certificates of appreciation but also highlighted the critical role of robust IT infrastructure in advancing electoral governance and enhancing civic participation across the country



Scan QR Code for read more



DAMPS

Enabling Ex-gratia assistance faster, transparent and accountable

Edited by KAVITA BARKAKOTY

Odisha's unique geo-climatic conditions make it highly vulnerable to a variety of natural disasters. The coastal areas are prone to cyclones, storm surges, and tsunamis, while its 11 major river systems frequently cause floods. Flash floods, landslides, and increasing drought severity in the western regions further compound these challenges. Additionally, the state faces risks from moderate earthquakes, heat waves, lightning strikes, forest fires, and industrial accidents. The rapid industrialization also heightens the potential for Chemical, Biological, Radiological, and Nuclear (CBRN) incidents.

To address these multifaceted risks, the Office of the Special Relief Commissioner, in partnership with the National Informatics Centre, has implemented an ICT-enabled project. The Disaster Assistance Monitoring & Payment System (DAMPS), developed by NIC Bhubaneswar, ensures timely, transparent financial assistance to disaster victims and their families. This system aims to set a benchmark in service delivery by proactively supporting disaster relief operations across Odisha.

Furthermore, DAMPS integrates comprehensive data management capabilities, including real-time monitoring, decision support analytics, and administrative oversight. This integration



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DAMPS is a comprehensive system integrating G2C and G2G services via GIS maps and real-time systems. It ensures prompt ex-gratia assistance to disaster victims' next of kin, enhancing service quality for Disaster Management Authorities. Currently operational across Odisha, it serves the Office of the Special Relief Commissioner, covering 30 districts, 58 Sub-Divisions, 317 tahasils, and 2540+ RI circles, promoting governance and transparency.



enhances the state's readiness and response capabilities, allowing for targeted interventions tailored to specific disaster types and vulnerable geographic areas.

Functionalities

DAMPS encompasses a broad array of functionalities essential for disaster management and relief operations. Key features include:

- **Field Data Collection:** Gathering and verifying real-time data on casualties and injuries caused by natural disasters from Revenue circles and Tahsils.
- **Case Initiation and Approval:** Initiating, scrutinizing, and sanctioning cases by Tahasildars, Sub-collectors, and District Collectors respectively.
- **Integration with CCTNS Portal:** Linking cases to the Crime and Criminal Tracking Network & Systems (CCTNS) portal for unnatural death cases.
- **Case Examination and Review:** Evaluating and

reviewing cases by Assistant Settlement Officer (ASO), Under Secretary, Joint Relief Commissioner (JRC), and Additional Commissioner of Relief (ACR).

- **Approval and Disbursement:** Approving cases by the Special Relief Commissioner (SRC) followed by financial disbursement by Financial Advisor (FA) and Drawing and Disbursing Officer (DDO).
- **Online Payment Disbursement:** Directly transferring ex-gratia assistance for death and injury to the Next of Kin (NOKs) of disaster victims via the Integrated Financial Management System (IFMS).
- **Dashboard Monitoring:** Monitoring operations through dashboard-based systems at the sub-divisional, district, and state levels.

This comprehensive system is implemented statewide in Odisha, initially focusing on ex-gratia payments for death, injury, and missing persons. The Government of Odisha aims to establish a benchmark in service delivery, exemplifying proactive disaster assistance that sets a standard for other states across the country.

Salient Features

- **Real-time Reporting:** Mobile app and web-enabled platforms for immediate reporting of casualties, missing persons, and injuries by Revenue Inspectors from the field.
- **Next of Kin Identification:** Efficient identification of Next of Kin (NOK) of the victim to streamline assistance.
- **Integration with Law Enforcement:** Integration with CCTNS for seamless linking of Unnatural Death FIRs, Post Mortem (PM) reports, VISRA reports, etc., from respective police stations.
- **Case Management:** Forwarding and re-forwarding of cases to the next level for necessary actions and approvals.
- **Financial Management:** Integration with Integrated Financial Management System (IFMS) for online disbursement of financial assistance.
- **Reporting and Analytics:** Generation of detailed reports on district-wise figures of casualties, missing persons, and injuries.
- **Dashboard Monitoring:** Dashboard-based monitoring at the State and District levels for real-time oversight and decision-making.
- **Notification System:** Notification of failed payments and reasons, ensuring transparency and accountability.

- **Security and Access Control:** Secured access with role-based authorizations to protect sensitive data and ensure compliance with regulations.

Technology Stack

DAMPS, developed by NIC Bhubaneswar, is a cloud-based solution integrating GIS, secure web apps, and mobile responsiveness, supporting Revenue & Disaster Management Department, Govt. of Odisha since last 3 years. Officials use role-based workflows for secure financial transactions via IFMS. Hosted on NIC's MeghRaj Cloud, the web app launched on <https://dampsodisha.nic.in> in June 2020, backed by ongoing NIC support.

Its technology stack includes:

- Windows server, IIS, SQL Server 2014
- ASP.Net, C#, JavaScript, JQuery, CSS, JSON, REST API, Bootstrap, VS Reporting Tools for web apps
- Android, Java with JDK 1.8, JSON, REST API, Volley, HTTP, XML, View Components for mobile apps
- Google Maps integration for spatial data visualization and disaster management support.

Benefits

Immediate Reporting from the Field (G2C) (G2G)

- Swift reporting via mobile apps for Preliminary Information Reports (PIR), aiding quick decision-making by administrators.
- Reduced response times with user-friendly forms, online manuals, and proper screen layouts for incident data input.
- Geo-tagging via mobile apps enhances last-mile connectivity, improving public satisfaction with disaster assistance services.

- Centralized control and monitoring through single-point access accelerates financial assistance processes.

Initiation of Ex-Gratia Cases at Tahasils (G2G)

- Automated case number generation and digital document management streamline workflow at tehsil levels.
- Digital order sheets enhance transparency with sequential noting and commenting, overcoming previous issues of file mismanagement.
- Online sanctioning and automatic case numbering simplify district-level operations, consolidating information for easier review.

Easy Access and Transparency (G2C) (G2G)

- Enhanced public access to information ensures transparency in tracking stage and status updates.
- SMS-based notifications keep Next of Kin informed about payment objections or successful disbursements.

Online Integration with CCTNS Portal (G2G) (G2C)

- Seamless integration with the CCTNS portal facilitates efficient verification of police records at tehsil administration levels.

Reduction in Administrative Pendency (G2G)

- Performance metrics measure and reduce administrative pendency, generating reports on pending days at various administrative levels.

The Disaster Assistance Monitoring & Payment System (DAMPS) has been an important and efficient tool for Disaster Management Authorities for disbursement of ex-gratia assistance to the next of kin of disaster affected victims. The online implementation has significantly reduced manual paper works and delay at different levels. With the implementation of 5T initiatives of Government, DAMPS has proven ability of using technology, team work within time leading to transparency and transformation. The NIC, Odisha has provided technical solution and consultancy in implementing the portal that has been working since last 3 (three) years very successfully.

I take the opportunity to congratulate you all for the continued effort and look forward for greater participation in future.



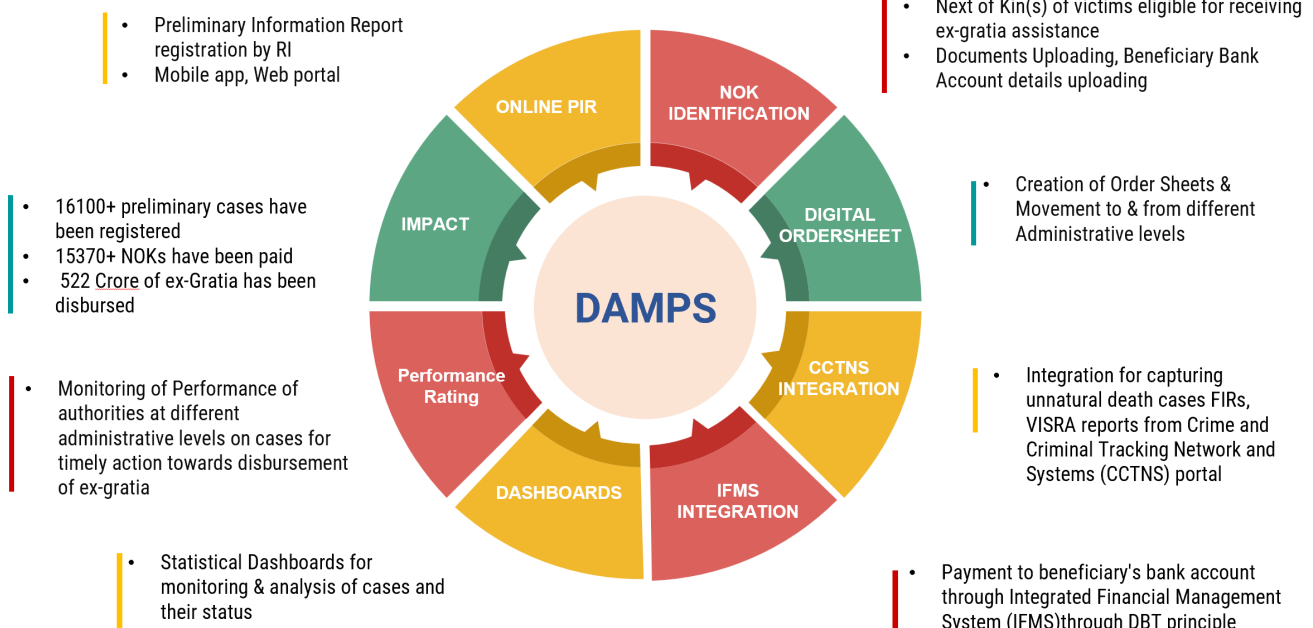
Satyabrata Sahu IAS

Special Relief Commissioner & Additional Chief Secretary

Revenue & Disaster Management Department
Government of Odisha

▼ Fig 9.1

Disaster Assistance Monitoring & Payment System, Odisha





▲ Fig 9.2: Shri PK Jena, IAS, Chief Secretary, Odisha along with NIC DAMPS Team receiving the Skotch Award



▲ Fig 9.3: Technology Sabha Excellence Award 2024 being received by Shri Satyabrata Sahu, IAS, Additional Chief Secretary, Odisha

Performance Rating of Administrative Domains (G2G)

- Ratings based on case disposal and disbursement metrics guide improvements and corrective actions across administrative domains.

Disbursement of Ex-Gratia Payments (G2C)

- Ex-gratia payments are targeted based on disaster type and incident severity to ensure fair compensation. For instance, payments are structured at Rs. 4,00,000 (four lakh) for death cases due to drowning, snakebite, lightning, flooding,

cyclone, heavy rain, earthquake, etc., and Rs. 50,000 (fifty thousand) for heat wave incidents, optimizing financial assistance allocation efficiently.

Implementation and Impact

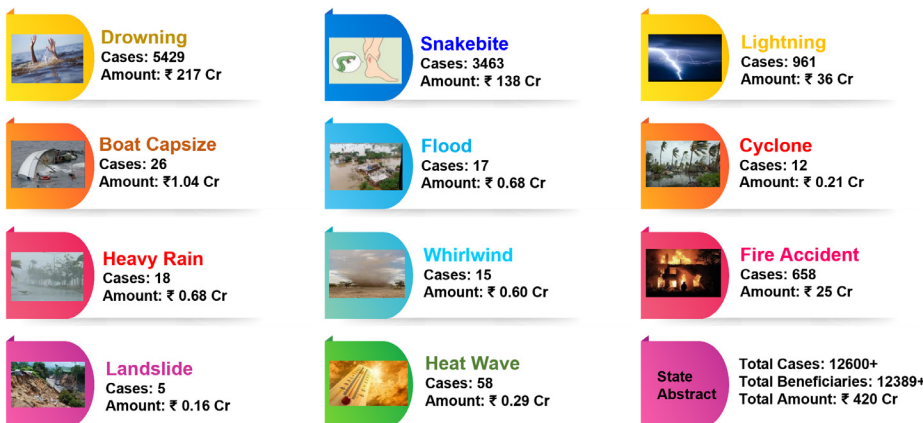
- Over 16,000+ preliminary cases have been registered for casualties, missing persons, and injuries by Revenue Inspectors.
- Online integration with the CCTNS portal has significantly reduced the time needed to obtain police FIR reports and Post Mortem Reports through traditional methods.

- Transparency is ensured by providing information to Next of Kin (NOK) via SMS and the website.
- Payments have been made to over 15,370 NOKs to date.
- More than 522 Crore of ex-gratia payments have been disbursed to NOKs of disaster victims.
- Citizens benefit from streamlined service with online payment options, eliminating the need for physical transactions.
- Dashboards and analytical reports have improved monitoring, addressing operational challenges promptly to enhance service delivery to NOKs.

▼ Fig 9.4: Capacity Building of Field level Officers for DAMPS



▼ Fig 9.5 Statistics of ex-gratia cases in Odisha



Awards

Following are the awards and recognition received for the project:

- TechSabha Award 2024
- Skoch Silver Award 2023-2024
- Gov-Connect Digital Transformation Award 2022-2023
- CSI SIG e-governance Award 2021-22
- Gems of Digital India Award 2020-21

Way Ahead

DAMPS will broaden its coverage to include comprehensive assistance measures: agricultural aid for farmers facing land losses due to de-silting, fish farm restoration, and impacts from landslides or river course changes. It will also address losses in agricultural, horticultural, and annual plantation crops. Additionally, the platform will provide animal husbandry support to small and marginal farmers, covering replacements for milch animals, draught animals, and animals used for haulage. Ex-gratia payments will be extended for fully, severely, or partially damaged Pucca, Kutcha, or Hut houses, ensuring robust support across various types of disaster scenarios.

Contact for more details

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NextGen DISE

NextGen District Information System for Elections

Edited by **VINOD KUMAR GARG**

The District Information System for Elections (DISE) was developed by NIC Punjab in 2007 and has since been implemented in multiple regions, including Punjab, Himachal Pradesh, Karnataka, Delhi, Chandigarh UT, Mizoram, and Manipur. In recognition of its potential for national application, the Election Commission of India (ECI) has asked the Chief Electoral Officer (CEO) of Punjab to demonstrate DISE with the intention of scaling it up nationwide. Subsequently, a presentation on the proposed NextGen DISE was delivered by the CEO of Punjab and the State Informatics Officer (SIO) of Punjab at the ECI office. The ECI granted in-principle approval and mandated a pilot implementation during the 18th General Elections to the Lok Sabha.

In this backdrop Shri Vivek Verma, DDG & SIO Punjab spearheaded the initiative to develop NextGen DISE software. It has been developed in a short duration of six months and comprises of following modules:

- **Polling Personnel Management System (PPMS):** Web based application for data digitization, data import from iHRMS/APIs/Excel/4.



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NextGen DISE developed by NIC Punjab comprises of Polling Personnel Management System (PPMS), Poll Activity Monitoring System (PAMS) and Queue Information System (QIS). PPMS is a web-based software for data digitization, data import and random deployment of Polling Staff, Micro-Observers and Counting Staff. PAMS captures the data of pre-poll, polling and post-poll events using mobile app and renders the data on dashboard in real time. QIS offers real-time queue information at polling station to the voters through WhatsApp chat bot.



CSV for the random deployment of Polling Staff, Micro-Observers and Counting Staff with distributed architecture for replication in states. It was implemented in Punjab, Himachal Pradesh and UT Chandigarh during General Elections -2024.

- **Poll Activity Monitoring System (PAMS):** PAMS was deployed in Punjab and Ladakh to capture pre-poll, poll-day and post-poll events through mobile app by the officers on field duty and render the data on portal dashboard for monitoring the events in real time by senior authorities at state and district level.

- **Queue Information System (QIS):** QIS is an innovative system which facilitates voters to access real-time queue information via WhatsApp chat bot, using location of the voter or details of the polling booth. Voters can ascertain queue length, facilitating timely visit to polling stations. It was implemented in Lok Sabha Elections 2024 in Punjab and Ranchi (Jharkhand).

Features

PPMS

- Dashboards for management, monitoring and updation of employee data
- Generation of checklists and verification of employee data submitted by Offices/ Sub-Departments
- Management of exemptions based on certain criteria
- Flexibility to change the level at which an employee can be deployed as per the requirements or change in criteria for selection
- Provision to use staff in overlapping/

I wanted to take a moment to express my sincere appreciation for the commendable work NIC Punjab has been doing. The dedication, creativity, and meticulous attention to detail have been instrumental in delivering high-quality solution in the shape of 8. NextGen DISE, PAMS and QIS that consistently exceed our expectations. The collaborative spirit and professionalism of the divisions and district centres of NIC Punjab set a benchmark for the entire country.

Keep up the phenomenal work!



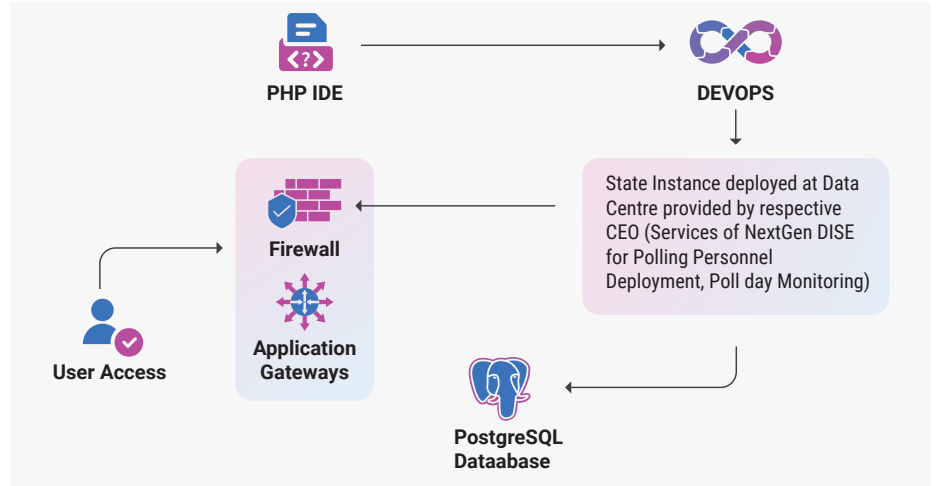
Sibin C.
Chief Electoral Officer
Punjab

non-overlapping mode for Polling Personnel, Micro Observers and Counting Parties

- Three Stage Randomization of Polling Personnel
- Two Stage Randomization of Micro Observers
- Three Stage Randomization of Counting Parties
- Management of rehearsals for all stages
- Marking of absentees and cancellations
- Provision to push additional staff in the event of shortfall after first stage
- Provision for processing reserve staff, export data from one district to another to meet shortfalls
- Provision to export parties formed at Second Stage for ACs having polling stations falling in two districts
- Generation of duty orders, attendance sheet, ID Cards with photo for all stages, summaries of shortlisted, left-over and exempted staff
- Generation of Form 12, 12A, 12B (EDC) for Polling Personnel and Micro Observers

PAMS

- Real time-based voter turnout feature with dynamic colour coding
- Security based registration and access of Mobile App using Passcode and OTP
- Managing events based on their occurrence times. Any event can be added, removed or made active. Facilitates ARO to update Event on behalf of Sector Officer
- Captures data for simultaneous elections of Lok Sabha and Vidhan Sabha through single user account
- Equipped to capture data from areas where Internet facility is not available



▲ Fig 2.1 Nextgen DISE System Architecture

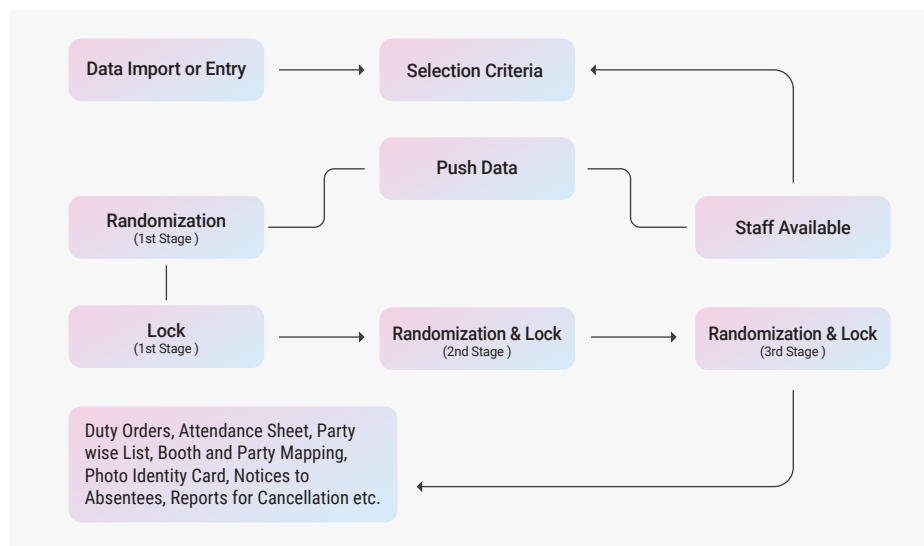
- Role based Dashboards for CEO, PC, AC, District etc. Based on roles, different levels of access and permissions can be granted to users to monitor activities
- Notifications and SMS Alerts to stakeholders to update events
- Reporting tools to track and analyse data. State specific dashboards & visual representations such as charts and events to portray progress
- Poll interruption to give alert message at higher level. Interruptions deal with the Law & Order situation and faulty EVMs
- Flexibility as per the states and type of election
- Addition of virtual machines, CPU, memory, storage to handle spikes in usage. Handle a high volume of clicks, ensuring the system

The NextGen DISE is indeed a testament to the NIC's dedication to delivering top-notch digital solutions. The collaborative efforts and professionalism demonstrated by NIC Punjab and NIC UT Chandigarh have undoubtedly set a high standard nationwide.

I wish continued success to NIC Punjab & UT Chandigarh and their contributions to the field of IT and public service!

Vijay N. Zade
Chief Electoral Officer
Chandigarh

▼ Fig 2.2 PPMS Workflow

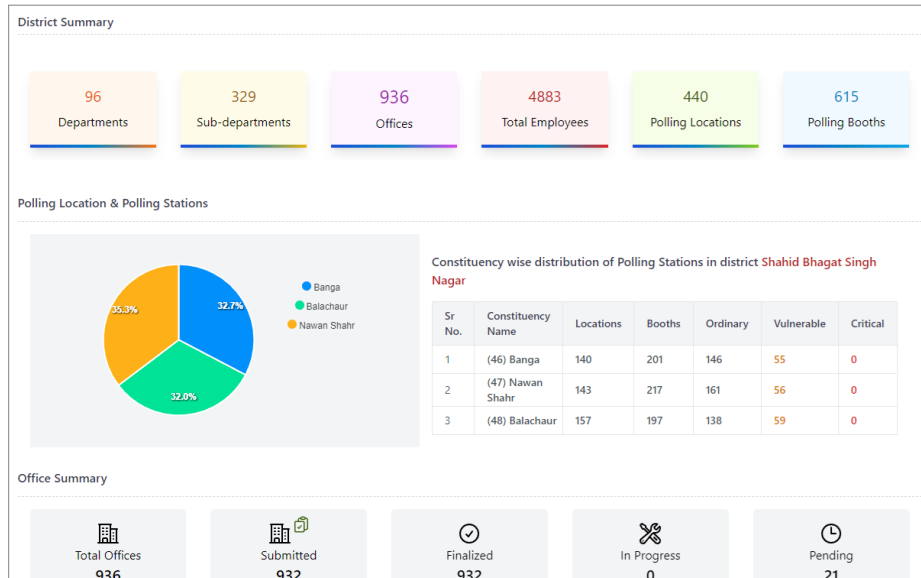


remains responsive during peak usage

- Functions well on different web browsers, ensuring a consistent user experience regardless of platform or device
- Utilize advance token-based access algorithms for secure interactions between the app and the server
- Web socket APIs for access of information in real time

QIS

- Voter need to send a message by typing 'Vote' to the WhatsApp number 7447447217
- Voter receives a link, which on clicking, presents two options: (1) Location Wise and (2) Booth Wise
- For the location-wise option, voter shares lo-



▲ Fig 2.3 NextGen DISE District Summary Dashboard

NextGen DISE is a very useful web application developed by NIC. It has been successfully used in Himachal Pradesh during Lok Sabha Elections-2024 & Bye-Elections-2024 for data entry of Polling Personnel, performing three stage randomization and deployment of Polling Parties at Polling Stations. I appreciate hard-work and efforts made by NIC in developing NextGen DISE application.



Maneesh Garg
Chief Electoral Officer
Himachal Pradesh

ation, which displays a list of polling booths near the location on the mobile

- By entering the Booth Number, voter receives real-time information on how many voters are standing in the queue at that booth
- For the booth-wise option, voter selects the State, followed by the District. This brings up all the Assembly Constituencies in that district. After selecting the Assembly Constituency and entering the Booth Number, voter is provided number of voters in the queue at that "booth"

Technologies Used

PPMS has been developed using Open-Source Technologies (PHP-Laravel and PostgreSQL). It

can be deployed in Linux as well as Windows environment. Queue Management feature of Laravel is used for parallel processing in randomization modules. DomPDF, jsPDF and FPDF libraries are used for reporting.

PAMS has been developed using comprehensive technology stack ensuring robustness and scalability. The backend utilizes RESTful APIs developed with .NET Core Framework 8, PostgreSQL version 15. PAMS portal leverages React with Next.js.

For mobile app, Flutter and Dart are used to build a responsive user interface on Android and iOS platforms.

Benefits / Impact

NextGen DISE facilitates Manpower Management of all aspects of elections right from collection of Polling Staff data to scheduling the rehearsals and randomizing of Polling Staff, Micro Observers and Counting Staff. It makes elections more efficient and transparent. Following showcases the benefits and impact made by NextGEN DISE:

- PPMS has been used for randomizations of Polling Staff, Micro-Observers and Counting Staff in 13 Parliamentary Constituencies covering 23 Districts, 117 Assembly Constituencies and 24522 Polling Booths of Punjab. Replicated in Himachal Pradesh having 4 Parliamentary Constituencies, 68 Assembly Constituencies and 7618 Polling Booths. Successful replication in Chandigarh UT having 1 Parliamentary Constituencies and 599 Polling Booths
- PAMS automates the process of monitoring of poll events and streamlines the poll process flow.
- PAMS is an API based PAMS is an API based software that can be integrated with other applications

- PAMS improves decision-making by access to real-time data and analytics, resulting in increased efficiency and enhanced decision-making

- QIS facilitates voters by providing number of voters in queue at a particular polling station through Whatsapp Chat Bot

Way Forward

The future of NextGEN DISE is focused on significant upgrades to enhance scalability and efficiency. The system will incorporate advanced features such as Database Sharding for large-scale operations, QR-based logins, AI-driven data verification, and automated SMS and WhatsApp alerts. It will support separate roles for departments and AROs, introduce workflows for exemption management, and enable checklist generation at the DEO level. Additionally, the system will include capabilities for data export between districts, data import for Police Personnel, and updating employee transfer details. PAMS is being developed into a comprehensive solution for Election Monitoring, featuring modules like the Counting Day Real-Time Event Capturing Portal and Booth Watch LIVE, a map-based interface for Real-Time Polling Booth Monitoring. The system will also include a Vehicle Monitoring System to track the movement of vehicles from Collection Centers to Polling Stations in real-time.

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The execution of PAMS portal and mobile app was exemplary. This innovative system ensured real-time issue resolution allowing problems to be swiftly addressed and thus minimizing disruptions and maintaining the integrity of electoral process.

I extend my deepest gratitude to NIC Ladakh and NIC Punjab for relentless efforts and extraordinary contribution.



Sonam Chosjor
Joint Chief Electoral Officer, Ladakh

PM Poshan Shakti Nirman Portal

Enhancing Efficiency and Transparency in School Nutrition Programs

Edited by MOHAN DAS VISWAM



The Pradhan Mantri Poshan Shakti Nirman scheme, formerly known as the Mid-day Meal Scheme, provides cooked meals to children in classes 1 to 8 in Government and Aided schools. It aims to boost enrollment, retention, and attendance in these schools while improving children's nutrition levels.

In 2017, the Government of Madhya Pradesh established the MP State Mid-Day Meal Council as a Special Purpose Vehicle for the effective implementation of the scheme. This council operates under the Rural Development Department.

NIC Madhya Pradesh launched an initiative to streamline and simplify the scheme's implementation. This effort resulted in the creation of the Madhya Pradesh State PM Poshan Shakti Nirman Portal, ensuring hassle-free and rule-based execution of the scheme across the state.

Components in the Scheme

- School onboarding, student enrollment, and attendance tracking.
- Appoint cooking agencies and cook-cum-helpers.
- Allot food grains to schools.
- Pay cooking and transportation costs to agencies.
- Pay honorarium to cook-cum-helpers.
- Pay MME costs to School Management Committees.
- Monitor and evaluate scheme implementation through physical inspections.



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MP State PM Poshan Shakti Nirman Portal enhances the Pradhan Mantri Poshan Shakti Nirman scheme by automating food grain provisioning, ensuring transparency with Aadhaar-enabled authentication, and facilitating timely digital payments. This digital platform streamlines operations to deliver nutritious meals to millions of children in government and aided schools across the state, promoting better enrolment, retention, and nutrition outcomes.



Challenges in the Earlier Process

Scale of Operations

- Daily provision of over 66 lakh hot cooked meals to 1.12 lakh schools.
- Engagement of approximately 70,000 Self Help Groups (SHGs) for meal service in schools.
- Transportation of more than 1.5 lakh metric tons of food grains from Civil Supplies Corporation (MPSCSC) depots to Fair Price Shops (FPS) near schools.
- Payment of around 1,100 crores for cooking costs, transportation, and honorarium.

Complexity of Implementation

- Involves multiple agencies and departments with distinct roles and responsibilities.
- Requires monitoring food quality, nutrition

levels, hygiene, and fair allotment of food grains.

- Necessitates precise estimation of food grain demand at all schools to ensure MPSCSC can handle logistics.
- Demands timely payments to cooking agencies and cook-cum-helpers to sustain operations and growth.

Ad-hoc Systems/Mechanisms to Monitor

- Previously, districts had their own methods and mechanisms.
- These ad-hoc systems consumed significant resources, often at the expense of quality goals like nutritional monitoring and hygiene.
- Lack of reliable mechanisms led to payment delays, affecting SHG viability and volunteer motivation among cook-cum-helpers.

Innovations

Data Collaboration with the State School Education Portal

- Seamlessly integrates with the State School Education Portal for efficient data sharing.
- Real-time utilization of school information registered within the portal.
- District-level field teams can access updates and details of newly added schools.
- School enrollment data is sourced from the portal, ensuring accurate and reliable information.

Rule Engine for Food Grain Provisioning

- Incorporates a rule engine to calculate the precise amount of food grains required for mid-day meals.
- District teams can customize provisioning based on their specific menus and report average monthly attendance.
- State administration sets per capita food grain allotment limits and configures the number of working days to match the operational calendar.

Integration with Aadhaar-enabled Public Distribution System (AePDS)

- Designates representatives from cooking agencies to collect food grains on behalf of schools.
- Representatives undergo Aadhaar authentication at Fair Price Shops (FPS) via AePDS before receiving allotted grains.

- AePDS reports the quantity of food grains collected, ensuring transparency and accountability.

Integration with Public Finance Management System (PFMS)

- Utilizes modular components for a coherent and efficient payment process.
- Enhances overall efficiency and effectiveness of the integration.

Mobile App

- Available on both the Apple App Store and Google Play Store.

Evaluation of Scheme Implementation via Mobile App

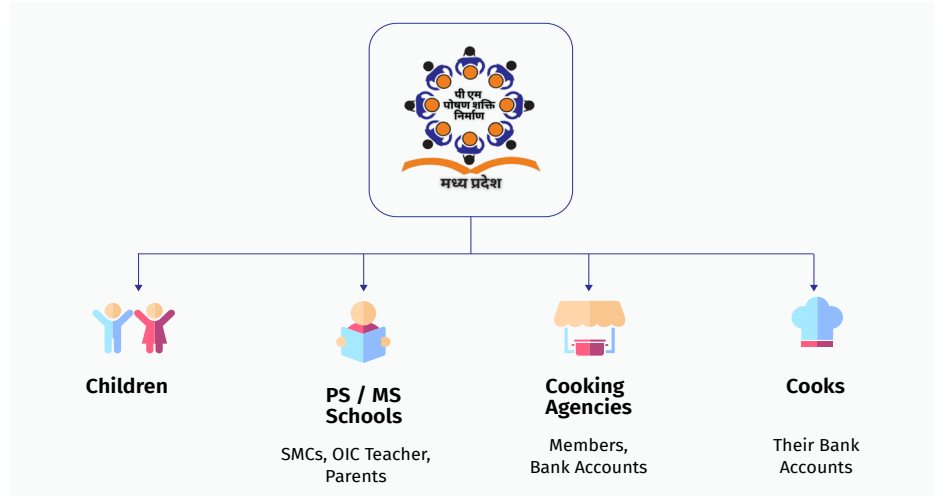
- Structured inspection process with designated "Inspectors" assigned to assess scheme implementation.
- Inspectors conduct geo-tagged inspections using a Mobile App.
- Evaluation parameters are adaptable to align with academic priorities and government mandates.
- Real-time oversight of ongoing inspections, Inspection Diary, and School Inspection Register promotes efficient monitoring and timely intervention.
- Encourages ongoing assessment and continuous improvement.

Dynamic Dashboard for Key Performance Indicators

The platform offers a dynamic dashboard accessible through both the web portal and mobile application, featuring significant Key Performance Indicators (KPIs):

For Schools:

- Number of schools within a district.
- Total count of enrolled students.
- Schools lacking Cooking Agencies, Cook-cum-helpers, or with zero enrollment.



▲ Fig 10.1 PM Poshan Shakti Nirman Portal Stakeholders

Payments

- Schools where Cooking Costs, Transportation Costs, Honorarium, or Mid-day Meal Expenditure (MME) payments are pending.
- Allotment and Distribution of Food Grains:
- Schools with pending food grain allotment.
- Quantity of food grains lifted from Fair Price Shops (FPS).

Cooking Agency

- List of schools receiving services from Cooking Agencies.
- Comprehensive details of payment orders for cooking and transportation costs.

Cook-cum-helpers:

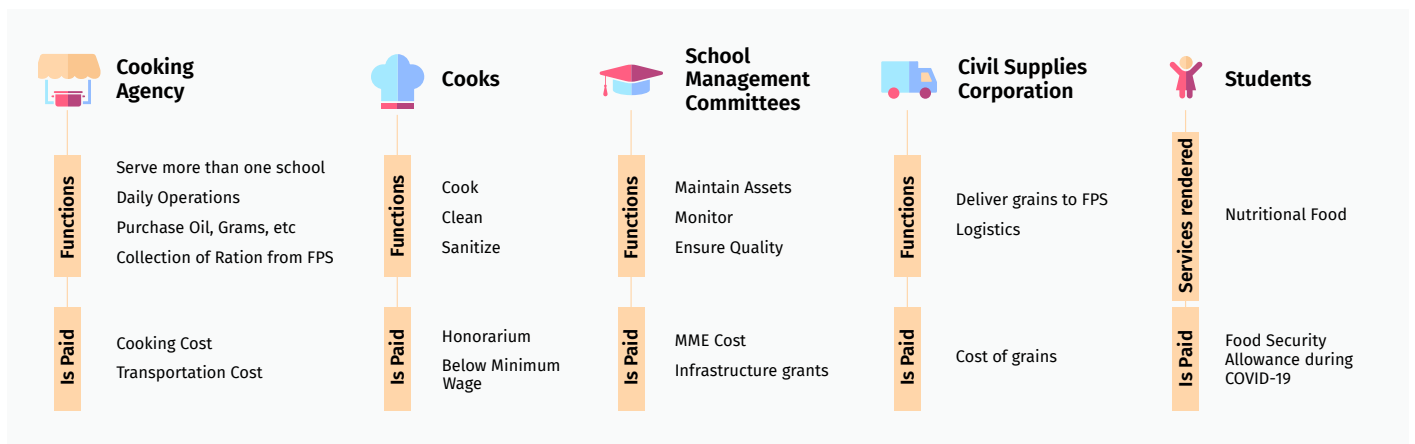
- Details of schools with active Cook-cum-helpers.
- Detailed records of all payment orders related to Cook-cum-helpers.

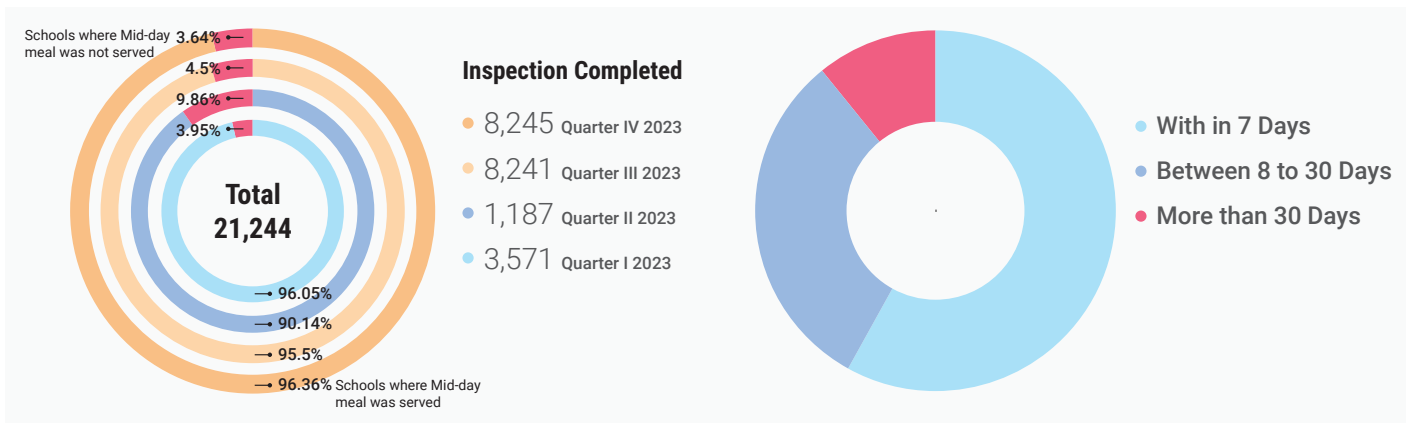
This comprehensive dashboard enhances transparency and accessibility, providing stakeholders with real-time insights into various critical aspects of the scheme's implementation.

▼ Table 10.1: Number of Attempts for Successful Payment

No of Attempts to Pay	No of Transactions Paid Successfully	Expressed as Percentage
1	29,38,179	99.36%
2	18,683	0.63%
3	248	0.01%
4	25	-0.0008%
>=5	17	-0.0006%

▼ Fig 10.2 Functions and Services Offered to PM Poshan Shakti Nirman Portal Stakeholders





▲ Fig 10.3: Inspections of Schools for Evaluation of the implementation of the Schemes

▲ Fig 10.4: Number of days (Latency) between creating a Pay Order and the Actual Payment

Benefits/Goals Achieved

Single Source of Functional Schools and Enrollment

Integration with the Online School Enrollment Register created a single source of functional schools and their enrollment across all blocks and districts in the State. This ensures no school (government/aided/madrasa) is omitted from availing the mid-day meal, preventing leakage via falsified enrollment numbers or school status.

Mobile App for Inspection Reporting

Each inspection conducted via the app generates a digital report, valuable for comprehensive

analysis of scheme implementation within a school. This process fosters a sense of ownership within the field team and facilitates identifying gaps, planning strategic interventions, tracking follow-up actions, and assessing the overall impact on the scheme's implementation.

Digital Payment of Cooking Costs, Transportation Costs, and Honorarium

The digital system ensures timely payments, sustaining and engaging SHGs in the MDM scheme. Timely honorarium payments to Cook-cum-helpers (CCHs) for their voluntary services boost morale and incentivize continued engagement.

Standardized Food Grain Allotment

The system computes precise estimates of food grains required at each school, creating a standardized, customizable, and configurable allotment matrix. This precision eliminates misappropriation and accounts for regional dietary preferences and nutritional requirements.

Improved Logistical Planning

MPSCSC can access authenticated allotments for each FPS, enabling comprehensive transportation strategies. Consolidating allotments for the Targeted Public Distribution System and PM Poshan Shakti Nirman Scheme enhances efficiency, productivity, and better earnings.

Accountable Food Grain Collection

Food grains are collected from FPS via PoS devices after authentication through AUA, ensuring SHG representatives and FPS accountability. This system establishes a credible last-mile delivery channel for food grains in the MDM at schools.

Way Forward

Looking ahead, this application can benefit from advanced technologies to enhance transparency, efficiency, and effectiveness. Integrating real-time data analytics and AI-driven insights can optimize resource allocation and monitoring. Strengthening community partnerships and continuous capacity building for field teams will ensure high standards of service delivery. Innovations like blockchain for secure transactions and IoT for real-time monitoring can address emerging challenges, ensuring the scheme's sustainability and scalability. This approach promises improved nutritional outcomes for children while building a robust framework for future welfare initiatives.

▼ Fig 10.5: PM Poshan Shakti Nirman Mobile App



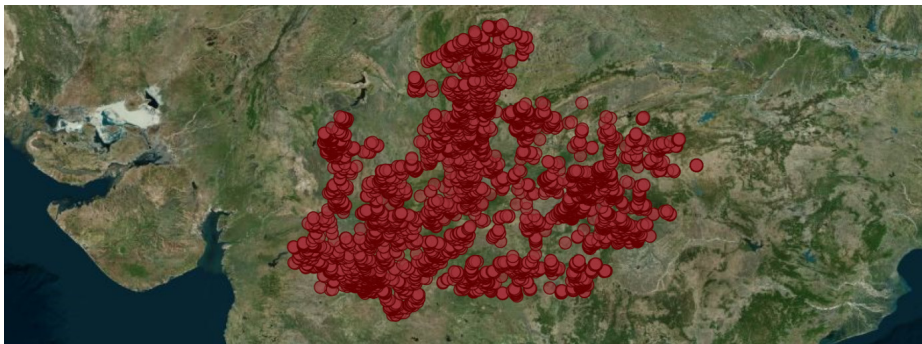
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URL:
<https://apps.apple.com/in/app/mp-pm-poshan-shakti-nirman/id6450832760>



▼ Fig 10.6: Stakeholder Schools under MP State PM Poshan Shakti Nirman Portal



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Sanstha Aadhaar

Streamlining Institutional Registration and Monitoring

Edited by **SUSHMA MISHRA**

In Rajasthan, various government bodies maintain detailed records of institutions: government offices by the finance department, schools by the education department, and industries by the industry department. In modern governance, identifying every institution—whether governmental, private, or non-governmental—is essential for effective planning and monitoring. To achieve this, the Government of Rajasthan, in technical collaboration with the NIC Rajasthan State Centre, has introduced an online registration system for all types of institutions, known as Sanstha Aadhaar.

Originally launched for private institutions on the recommendation of the 13th Finance Commission, the Sanstha Aadhaar system has since been expanded to include all types of institutions. This includes government departments, boards, corporations, autonomous bodies, non-governmental organizations, and all enterprises operating in Rajasthan. Each institution is issued a unique identifier, the Sanstha Aadhaar Number (SAN), through the online portal. The Rajasthan government has mandated that all establishments obtain a SAN before applying for or receiving any government grants or services.

Institutions can apply for a SAN using the Aadhaar number or Jan Aadhaar number of the owner or nodal officer and receive the SAN and certificate instantly via email or SMS without manual intervention. Alternatively, institutions may apply using ID proof such as a PAN card, driving license, voter ID card, passport, or



Sanstha Aadhaar integrates Sanstha Aadhaar Numbers across Rajasthan to monitor economic activities, supporting Economic Census and NSSO Surveys for informed policy-making. It ensures transparency and efficiency through online registration, certification issuance, and integration with state and UIDAI databases.



ration card. In these cases, the SAN is issued after verification by District Sanstha Aadhaar Registrars. The government has established a well-defined structure of Sanstha Aadhaar Registrars from state to block offices.

The Sanstha Aadhaar system captures details of both existing and new institutions in Rajasthan, enabling the state government to monitor institutional activities. It also generates area-specific activity profiles, facilitating better governance and oversight.

Salient Features

- **Uniform Registration Process:** SAN registration process is standardized across the entire state of Rajasthan.
- **Online Application Only:** Institutions must apply for registration online; there is no offline mechanism available.
- **Minimized Duplicity:** The single registration portal reduces the likelihood of duplicate registrations.
- **Centralized Database:** A centralized registration database is maintained, which can be used for various analytical purposes.
- **Authenticated Information:** Institutions' Aadhaar, PAN, and GSTN numbers are authenticated during the registration process.

haar, PAN, and GSTN numbers are authenticated during the registration process.

- **Standard NIC Code:** The system uses a standard 5-digit National Industrial Classification (NIC) code for classification.
- **Update and Cancellation:** Institutions have the facility to update and cancel their Sanstha Aadhaar online.
- **Multiple Shareholders:** The system allows for SAN registration with multiple shareholders.
- **MIS Reports:** Various Management Information System (MIS) reports are available at both the district and state levels.
- **Online Search Facility:** Citizens and institutions can search for registration information online.
- **Uniform Registration Certificate:** A uniform

Sanstha Aadhaar portal has smoothed the Registration System for all types Institutions in the state of Rajasthan. We have made it mandatory to register on Sanstha Aadhaar portal and get the SAN for availing any services in the state for the institutions. This system is completely online without any official interferences. Facilities have also been provided to apply and get the certificate from Mobile App and eMitar Kiosks. The system is integrated to various other databases of the state.

I congratulate the NIC Rajasthan team and the team of Economics and Statistics Department, Govt. of Rajasthan for putting in place this IT enabled system ensuring for transparency and fast delivery of services.



Naveen Jain IAS

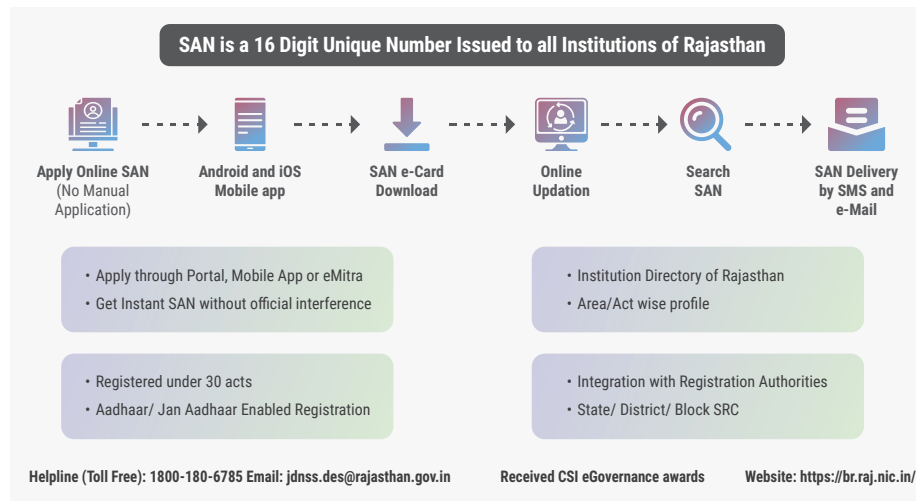
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▲ Fig 11.1 Features of Santha Aadhaar

registration certificate is issued throughout the state.

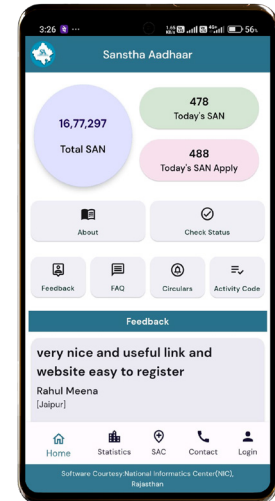
- **Communication:** Instructions, notifications, and other communications are circulated to District Santha Aadhaar Registrars and citizens.
- **SMS Alerts:** Citizens receive SMS alerts related to their registration.
- **Email Delivery:** The SAN certificate is delivered by email if an address is provided.
- **QR Code Implementation:** SAN certificates include a QR code for easy verification.
- **Mobile App:** A mobile app is available for citizens to access the Santha Aadhaar services.

Stakeholders

- **Citizens:** Citizens can view the list of institu-

tions available in their area.

- **Institutions:** Institutions can apply online using the resident's Aadhaar or JanAadhaar and receive SAN instantly on the portal. They can download their SAN certificate online.
- **e-Mitra Kiosks:** Over 80,000 e-Mitra Kiosks, authorized by the Government of Rajasthan, can apply online on behalf of institutions and download the certificate from the portal.
- **Registrars:** Santha Aadhaar Registrars can approve applications, process cancellation and update requests, and monitor the progress of Santha Aadhaar within their respective blocks or districts.
- **State Registrar:** The State Registrar has overall responsibility for regular monitoring and integra-



▲ Fig 11.2: Santha Aadhaar Mobile App

tion of Santha Aadhaar within government departments. They may propose rule enhancements or modifications, issue notifications, and generate MIS reports and various statistics.

Technology Stack

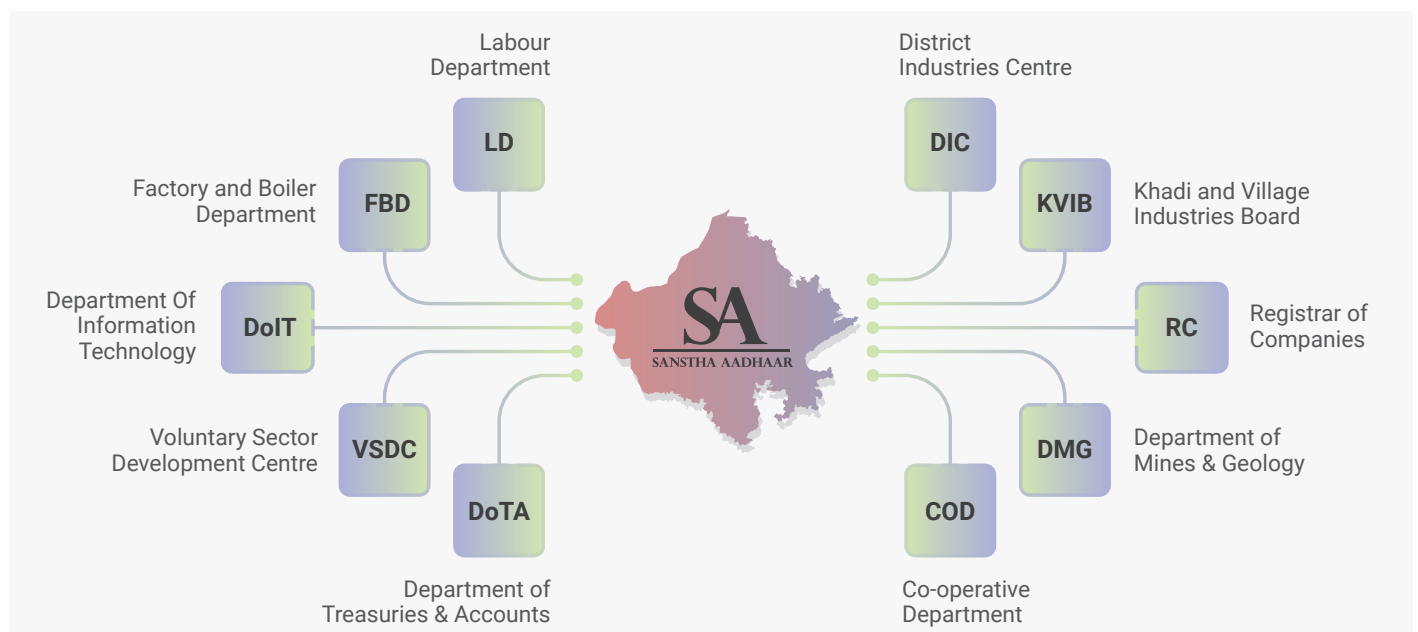
Application Development

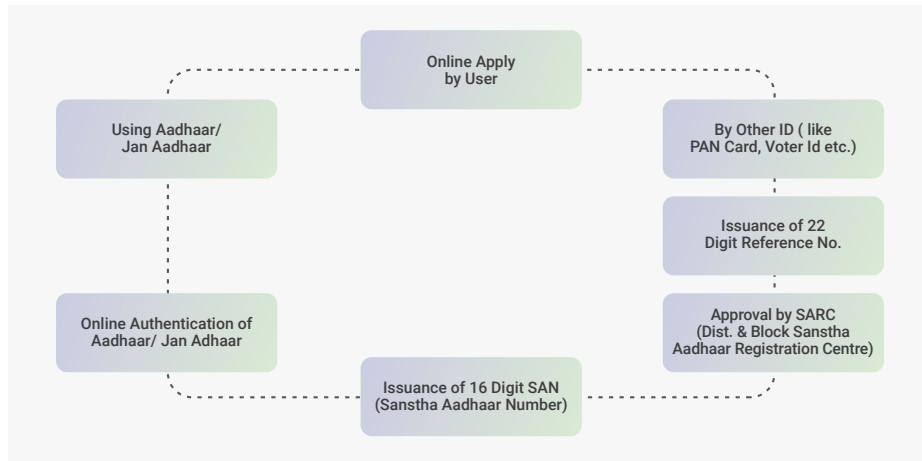
The Santha Aadhaar application is developed using ASP.Net with C# and JavaScript. This combination provides a robust framework for building dynamic web applications, ensuring a responsive and user-friendly interface.

Backend Database

The backend database for Santha Aadhaar is SQL Server 2012. This powerful relational database management system offers high

▼ Fig 11.3 Integrated State Stakeholder Departments with Santha Aadhaar Portal





▲ Fig 10.4 Sanstha Aadhaar Application Flow

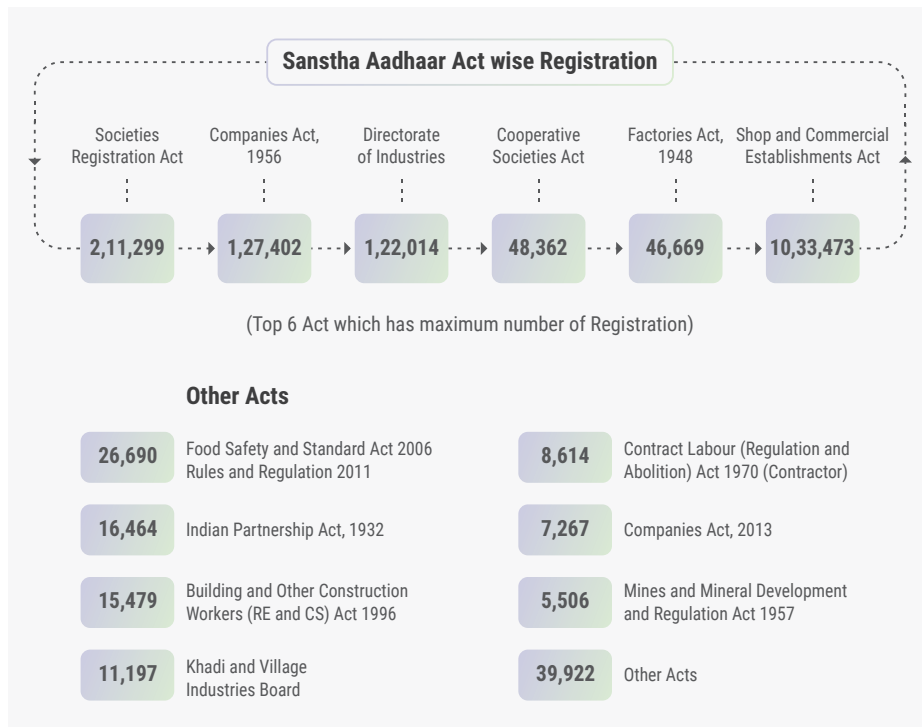
performance, scalability, and security, which are crucial for handling the extensive data involved in the registration and management of institutions.

Benefits

- **Area-Wise Institution Profiles:** Generates detailed profiles of institutions by area, aiding in policy formulation and planning.
- **Economic Census Utility:** Facilitates comprehensive economic census activities across the state.
- **Business Market Analysis:** Provides insights into existing and potential business markets.
- **Market Research Support:** Assists in conduct-

ing thorough market research.

- **Business Enterprise Framework:** Develops a robust framework for surveys, studies, and state Gross State Domestic Product (GSDP) estimates.
- **Business/Institution Directory:** Helps in preparing a comprehensive directory of businesses and institutions in the state.
- **Efficient Registration:** Ensures speedy registration and issuance of certificates.
- **System Transparency:** Enhances transparency in the Sanstha Aadhaar registration process.
- **Cost-Effective Solution:** The system is economically efficient due to its in-house development.



▲ Fig 10.5 Registration Statistics at Sanstha Aadhaar Portal

Sanstha Aadhaar is developed and being implemented with the excellent technical guidance of NIC Rajasthan. Portal aims to digitize details of all the Institution's in the state. Presently, no other integrated system is being used to capture institution details in Rajasthan. Institutions may now apply through Portal using their resident Aadhaar and Jan Aadhaar. System is being integrated with departments to authenticate SAN and push updations from the licensing authorities. I congratulate the NIC Rajasthan team for designing and developing the system.



Vinesh Singhvi
Registrar, State Sanstha Aadhaar & Director, Economic & Statistics Department

Integration

- **Aadhaar Authentication:** Integrated with UIDAI for seamless Aadhaar authentication.
- **Jan Aadhaar Scheme:** Connected with the Rajasthan Jan Aadhaar Scheme for authentication purposes.
- **Finance Department:** Linked with the IFMS portal of the Finance Department, Rajasthan, for efficient financial management.
- **Registering Authorities:** Integrated with all registering authorities to authenticate the SAN and synchronize their registration numbers with the SAN database, ensuring validity.
- **State Databases:** Ongoing integration with other state databases to enhance data consistency and accuracy.

Way Forward

It will be imperative for all institutions to integrate Sanstha Aadhaar Numbers into their operational frameworks, thereby enabling thorough monitoring of economic activities throughout the state. This integration not only supports the facilitation of Economic Census and NSS Surveys but also ensures comprehensive data collection essential for informed policy-making and strategic planning at both regional and state levels.

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Cryptographic Key Management

Balancing Security and Usability in Key Management

Edited by MOHAN DAS VISWAM

The management of cryptographic keys is crucial for securing sensitive data and ensuring the integrity and confidentiality of communications in web applications. Cryptographic keys play a vital role in applications for various security functions, like encryption and digital signing. Proper management of these keys is essential to protect against data breaches, unauthorized access, and other cyber threats. This article evaluates three methods for the generation and storage of cryptographic keys:

- Generation and Storage of Private Keys within Application Server
- Software-Based HSM with a Dedicated Server and Isolated VLAN
- Hardware HSM

Background

Applications typically use both digital signature and encryption for data integrity and confidentiality. Traditionally data hashing was used for securing database records. Since a bad actor can easily tamper the data and replace the hashes, digital signature was introduced to generate and store signature of the data. The digital signature of an official is insisted to sign every critical transaction in the application. However internal processes within application could create large number of records which are practically impossible to sign using personal digital signature solutions. Another use case is the encryption or digital signing of data exchanged with other stakeholder applications through APIs as part of the business process.

The scalability problem with client based digital signatures could be resolved by using server based digital signatures for signing and encrypting of records at server side. This approach required generation and storing private



The article explores three cryptographic key management approaches: storing keys in application servers, using Hardware Security Modules (HSMs), and implementing software-based HSMs on dedicated servers and isolated VLANs. It assesses each method's security, cost-effectiveness, and practicality. While storage in application/database server poses high security risks, hardware HSMs offer top-tier protection at a higher cost. Software-based HSMs strike a balance, providing enhanced security and scalability, making them an appealing option for secure and cost-effective key management.



keys within application servers or databases. This approach, while straightforward and cost-effective, poses significant security risks and trust issues. The following are some of the risks involved in generating and storing private keys within an application server:

- Application servers typically run in the demilitarized zone within the cloud or data centre. It is not advisable to store private keys in this zone due to limited isolation policies.
- Private keys stored in application servers are vulnerable to various types of cyberattacks such

as malware, unauthorized access, and insider threats.

- If an attacker gains access to the server, they can potentially compromise the private keys, leading to data breaches and loss of sensitive information.

Storing private keys in database is also common practice in private key management. However, this approach comes with several significant risks that could compromise the security of the cryptographic keys and the overall system.

- SQL Injection attacks on the database could reveal private keys
- Access to private key by the database administrator
- A data breach could also expose all the private keys
- Database backups that are not properly protected could be used to extract private keys

Hardware Security Module (HSM)

A Hardware Security Module (HSM) is a dedicated device designed to securely generate, store, and manage cryptographic keys. HSMs offer robust security features, including tamper resistance and strong access control mechanisms. The features and benefits of HSMs are given below:

Physical Security

- HSMs are housed in secure, tamper-resistant enclosures.
- They often include tamper-evident seals and self-destruct mechanisms that activate if unauthorized access is detected.

Secure Key Storage

- Keys are stored in a protected environment within the HSM and never leave the device in plain text.
- Cryptographic operations (e.g., signing, encryption) are performed within the HSM, minimizing the risk of key exposure.

Strong Access Controls

- HSMs implement multi-factor authentication (MFA) and role-based access controls (RBAC) to restrict access to cryptographic keys.
- Integration with identity and access management systems further enhances security.



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Table 13.1: Comparison of Cryptographic Key Management Methods

Feature	Application Server	Software-Based HSM	HSM
Security	Low	Moderate	High
Key Exposure Risk	High (keys Unprotected)	Moderate (keys protected)	Low (keys stored in dedicated Risk hardware)
Physical Security	None	None	Strong (tamper-resistant hardware)
Access Control	None	PIN based	Very Strong (MFA, RBAC, hardware tokens)
Compliance	Difficult to meet Standards	Easier to meet standards with secure implementation	Meets high security standards (FIPS, etc.)
Cost	None	Moderate (dedicated server/VM)	High (specialized hardware)
Deployment Complexity	Low	Moderate (requires dedicated server/VM)	High (requires specialized hardware setup)
Scalability	Limited (server resources)	High (virtualization/cloud)	Moderate (physical hardware limitations)

Compliance

- HSMs are often certified to meet stringent security standards such as FIPS 140-2/3, ensuring compliance with industry regulations.

Software-Based HSM

Software-based HSMs, also known as virtual HSMs, emulate the functionality of a hardware HSM within a software environment. A popular software based HSM is SoftHSM which is an implementation of a cryptographic store accessible through a PKCS#11 interface. SoftHSM was developed as a part of the OpenDNSSEC project. SoftHSM could be deployed on dedicated servers hosted in an isolated VLAN to enhance security. The features and benefits of Software-Based HSMs are given below:

Enhanced Security Compared to Application Servers

- Although not as secure as hardware HSMs, software-based HSMs provide a higher level of security than generating and storing keys within application servers.
- They utilize software encryption and access control mechanisms to protect private keys.

Cost-Effective

- Software-based HSMs are generally more affordable than hardware HSMs, making them accessible for organizations with budget constraints.
- They eliminate the need for specialized hardware, reducing capital expenditure.

Flexible Deployment

- Can be deployed on existing infrastructure, leveraging virtualization and cloud environments.
- Can be easily scaled to meet increase in usage requirements.

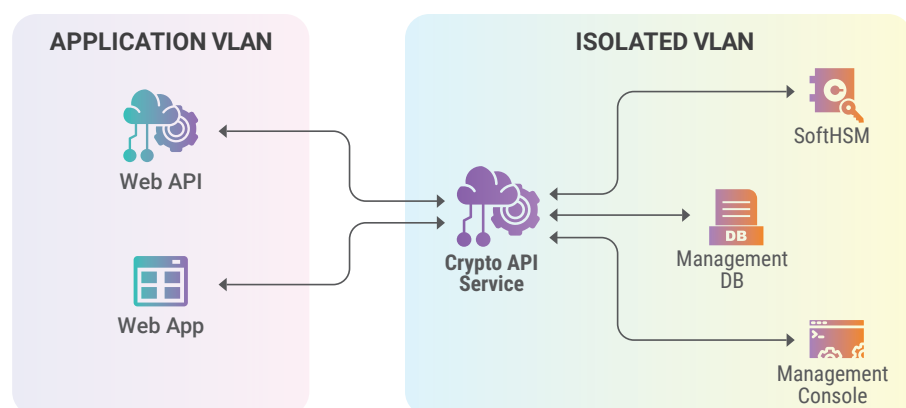
Access Controls

- Can be augmented to implement robust access controls, including MFA and RBAC.

Conclusion

The generation and storage of cryptographic keys within application/database servers poses significant security risks, including exposure to cyberattacks, lack of physical security, and compliance challenges. Hardware HSMs offer the highest level of security, providing robust physical protection, secure key storage, and strong access controls. They are compliant with stringent security standards, making them the preferred choice for organizations handling highly sensitive data. However, they come with higher hardware and licencing costs and deployment complexity. Software-based HSMs offer a balanced approach, providing enhanced security compared to application servers while being more cost-effective than hardware HSMs.

▼ Fig 13.1 SoftHSM based architecture



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Securing Machine Identities with Multi-Factor Authentication

Enhancing Security and Compliance in a Perimeter-less Network Era

Edited by MOHAN DAS VISWAM

In today's digital age, industries across various sectors are transitioning to digital channels at an unprecedented pace. This shift has led to a significant increase in the number of machine identities, which include mobile devices, Internet of Things (IoT) devices, virtual machines, containers, and APIs. As organizations migrate to cloud environments and adopt perimeter-less networks, securing these machine identities becomes crucial to prevent data breaches and unauthorized network access.

Cybercriminals employ sophisticated techniques such as malware, ransomware, and man-in-the-middle (MITM) attacks to compromise organizational security. Robust authentication mechanisms are essential to verify the identities of both users and machines. Multi-Factor Authentication (MFA) emerges as a core component of Identity and Access Management (IAM), providing additional verification layers to minimize the risk of security breaches. By requiring multiple forms of evidence to prove identity, MFA significantly enhances the security of machine identities in a complex, perimeter-less network landscape.

Importance of Securing Machine Identities

Machine identities are digital credentials used by machines to authenticate and communicate securely with other machines, services, and applications. These identities are essential for establishing trust and ensuring secure interactions in digital ecosystems. As the number of connected devices and applications grows, the potential attack surface for cyber threats expands. Unsecured machine identities can be



Multi-Factor Authentication (MFA) for machine identities adds an extra layer of security by requiring multiple verification methods during authentication. This helps protect against cyber threats by ensuring that only authorized machines can access systems and data. Implementing MFA for machine identities reduces the risk of unauthorized access and strengthens network security.



exploited by attackers to gain unauthorized access, disrupt services, and steal sensitive data.

A single compromised machine identity can lead to a cascade of security incidents, undermining the integrity of an entire network. For example, attackers can use stolen machine identities to move laterally within a network, bypassing traditional security controls and escalating privileges. This makes securing machine identities a critical priority for organizations seeking to protect their digital assets and maintain operational continuity.

Role of MFA in Safeguarding Machine Identities

MFA enhances security by requiring two or more of the following factors to verify a user's identity:

Knowledge factor: Something the user knows, such as a PIN or password.

Possession factor: Something the user has, like an encrypted security key or a time-based one-time password (TOTP).

Inherence factor: Something specific to the user, such as a fingerprint or facial scan.

By leveraging these diverse factors, MFA provides a robust defense against attacks that might exploit a single point of failure, such as a stolen password or compromised device.

Achieving a Zero Trust Security

Implementing MFA is a cornerstone in achieving a Zero Trust security model. Zero Trust operates on the principle that no entity—inside or outside the network—should be trusted by default. Instead, every access request must be continuously verified, ensuring that only authenticated and authorized entities are granted access. MFA supports this model by:

- **Validating Every Access Attempt:** Each access request is subject to rigorous verification, regardless of its origin. This approach effectively reduces the risk of lateral movement by attackers within the network.

- **Enhancing Visibility and Control:** MFA provides detailed logs and analytics on access attempts, allowing security teams to monitor and respond to suspicious activities in real-time.

- **Strengthening Endpoint Security:** By requiring multiple authentication factors, MFA reduces the risk of compromised endpoints, ensuring that only legitimate devices can communicate within the network.

Key Components

Knowledge Factor

It involves information that only the user knows, such as a password, PIN, or answer to a security question. This factor is the most traditional form of authentication. Despite its common use, it has vulnerabilities, primarily because it relies on the secrecy of the information. If the knowledge factor



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is compromised, for instance, through phishing or data breaches, unauthorized users can gain access. However, when combined with other MFA factors, the security is significantly enhanced.

Possession Factor

It requires the user to have a physical item to verify their identity. Common examples include:

- **Security Tokens:** Devices that generate a time-sensitive code.
- **Smart Cards:** Cards that contain encrypted authentication information.
- **Mobile Devices:** Smartphones that receive SMS or app-based OTPs.

These methods ensure that the user has a specific item in their possession at the time of authentication. While more secure than relying on knowledge factors alone, possession factors can be susceptible to theft. For e.g., if a mobile device is stolen, thief may be able to intercept OTPs unless additional measures are in place.

Inherence Factor

It is based on biometric data, which is unique to the individual, including:

- **Fingerprint Scans:** Using the unique patterns of an individual's fingerprints.
- **Facial Recognition:** Identifying a user based on their facial features.
- **Iris Scans:** Analyzing the unique patterns in the colored part of the eye.
- **Voice Recognition:** Verifying identity through unique voice patterns.

Biometric authentication is highly secure because it is extremely difficult to replicate someone's inherent characteristics. However, technology requires proper implementation to avoid issues like false rejections or spoofing.

Benefits

Strong User Authentication

Cyberattacks often exploit stolen credentials. By mandating MFA, organizations ensure users verify their identities through multiple methods, reducing the potential risk. Even if a password is compromised, additional verification steps provide a strong defense, significantly enhancing the protection of sensitive data and resources.

Compliance with Industry Regulations

MFA is crucial for compliance with industry regulations. In the financial sector, it supports compliance with Payment Card Industry Data Security Standard (PCI-DSS) and Service Organization Control regulations. In healthcare, MFA helps meet Health Insurance Portability and Accountability Act (HIPAA) requirements, securing patient information and enhancing data security.

Scalability for Evolving Workforce

As hybrid work models and cloud transitions become prevalent, MFA helps manage and monitor complex access requests. Adaptive MFA

assesses the risk of user requests based on factors like device and location, enabling dynamic policy adjustments and step-up authentication. For highly sensitive information, additional verification steps, such as biometric scans or codes sent to phones, may be required.

Compatibility with Single Sign-On

Integrating MFA with Single Sign-On (SSO) allows seamless user authentication without compromising productivity. Users benefit from not having to remember multiple passwords, while secondary MFA ensures secure access. This integration simplifies the user experience while maintaining high security standards.

Effective MFA for the Cloud

In cloud security, Federated Identity Management (FIM) plays a pivotal role by establishing secure connections between web-based applications and identity providers using Public Key Infrastructure (PKI). FIM facilitates trusted relationships between organizations and third parties, enabling secure sharing of digital identities across multiple domains.

PKI Security

The importance of MFA in cybersecurity was underscored by the Colonial Pipeline hack. PKI is one of the most common MFA forms, providing certificate-based identity authentication with a high level of assurance. PKI supports robust certificate-based security, enhancing network efficiency and security.

Addressing the Downsides

While MFA offers robust security benefits, it also comes with several challenges, such as increased complexity, costs, and potential user resistance. Organizations must weigh these factors carefully and implement strategies to mitigate the negative impacts, such as providing comprehensive user training, ensuring reliable infrastructure, and planning for ongoing support and maintenance.

Implementation

Planning and Strategy

Before implementing MFA, organizations need to conduct a thorough assessment of their current security posture and identify areas where machine identities are most vulnerable. This involves:

- Determine which systems, applications, and devices require the highest levels of protection.
- Evaluate the potential risks and threats to these assets, considering factors such as access patterns, user behavior and data sensitivity.
- Develop comprehensive security policies that define how MFA will be implemented, including which factors will be used and under what circumstances.

Technology Selection

Choosing the right MFA technologies is crucial for effective implementation. Organizations should consider:

- **Compatibility:** Ensure that MFA solutions are compatible with existing systems.
- **Scalability:** Select technologies that can scale with the organization's evolving needs.
- **User Experience:** Opt for solutions that provide a seamless and user-friendly authentication process to minimize resistance and encourage adoption.

Deployment and Integration

Deploying MFA involves integrating it with the organization's IAM infrastructure and ensuring that it is seamlessly incorporated into daily operations. Key steps include:

- Implement MFA alongside SSO solutions to streamline the authentication process and enhance security.
- Leverage FIM to facilitate trusted interactions between different domains and services.
- Use PKI for robust certificate-based authentication, ensuring that digital identities are verified.

User Training and Support

Successful MFA implementation requires comprehensive user training and ongoing support. This involves:

- **Training Programs:** Develop and deliver training programs to educate users about the importance of MFA, how it works, and how to use it effectively.
- **Support Services:** Establish dedicated support services to assist users with MFA-related issues, ensuring that they have access to timely help and resources.

Monitoring and Maintenance

Continuous monitoring and maintenance are essential to ensure the effectiveness of MFA. This includes:

- Conduct regular security audits to identify and address vulnerabilities or gaps.
- Develop and implement incident response plans to quickly address any security incidents.
- Keep MFA technologies and systems up to date with the latest security patches and upgrades.

Conclusion

As digital transformation accelerates, securing machine identities with MFA becomes indispensable. MFA not only strengthens user and machine authentication but also ensures compliance with regulatory standards. By implementing MFA, organizations can protect their digital infrastructure against sophisticated cyber threats and ensure a secure, resilient operational environment.

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Appscape

Mobile technology has emerged as a primary tool for governments to serve their citizens. It has bypassed the need of 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.



Election Quiz App

Developed by NIC Kangra, the Election Quiz app is intended for polling officials assigned to election duties in the General Elections for Lok Sabha 2024 in Himachal Pradesh. It features distinct question banks for Presiding Officers, Micro Observers, and Counting Staff, offering quizzes with 20 randomly selected multiple-choice questions tailored to the users' specific roles.

The app lets users retake quizzes until they reach a satisfactory score, with immediate feedback to help them learn and improve. Users can review past scores and answers, identifying strengths and weaknesses visible to Returning Officers (ROs) and Assistant Returning Officers (AROs).

The primary goal of the Election Quiz app is to ensure that Presiding Officers, Polling Officials, and Micro-observers are thoroughly familiar with the election procedures and prepared for any situation on polling day. The app includes comprehensive training materials and guidelines, serving as a valuable educational resource. This meticulously designed tool aims to enhance the skills, reinforce the learning, and boost the confidence of all polling personnel, ensuring a smooth and efficient election process.

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Digital Barabandi

The Digital Barabandi initiative in Sriganganagar, Rajasthan, is a groundbreaking effort aimed at optimising and improving the distribution of irrigation water among farmers. Traditionally, water allocation and irrigation scheduling have been labour-intensive processes, susceptible to human error due to the complexity of calculations involved. The advent of this digital system revolutionises these procedures by ensuring precise time allocation based on the specific area of each farmer's land.

Developed by NIC Sriganganagar, the app introduces transparency to the Barabandi process, significantly reducing the potential for disputes among farmers and minimising complaints received by local offices and related departments. This digital approach not only conserves valuable human resources and time but also empowers farmers with accurate information about their irrigation schedules directly from the canal distributaries.

The Digital Barabandi system exemplifies a commitment to leveraging technology for agricultural efficiency and equity. By automating the calculation and distribution process, the app ensures fair water distribution, fostering better relationships among farmers and promoting sustainable agricultural practices in the region.

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eCourts Services

The eCourts Services app is a comprehensive tool designed to provide detailed information on cases filed in Subordinate Courts and most High Courts across India. Tailored for use by citizens, litigants, lawyers, police, government agencies, and institutional litigants, the app allows users to access case details based on their specific needs, be it for District Courts, High Courts, or both.

Key features include a variety of search options, such as CNR (a unique number assigned to each case), case number, party name, filing number, FIR number, advocate name, relevant act, and case type. The app displays initial search results with case numbers and party names, with further details accessible through expandable captions. Users can view comprehensive case information, including type, filing and registration numbers and dates, hearing dates, court and judge details, petitioner and respondent information, case history, and judgments/orders.

The "My Cases" tab allows users to save and manage cases of interest, creating a personalized case portfolio. Features like the "Today's Cases" button and refresh option ensure users have the most current information. The app also includes an Advocate search feature, generating lists of cases associated with a particular advocate's name or bar code, and a unique cause list option for viewing all cases.

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Rajasthan Social Pension

The Rajasthan Social Pension app, developed by NIC Rajasthan for the Social Justice and Empowerment Department (SJED), streamlines the implementation of social security pension schemes. These schemes adhere to Article 41 of the Indian Constitution, which mandates state support for citizens facing destitution, old age, sickness, disablement, and other cases of need, within the state's economic capacity.

Introduced in 1995, the National Social Assistance Programme (NSAP) established a framework for a national policy on social assistance for the poor. The app builds on this foundation, ensuring pension benefits to eligible beneficiaries.

Key features

- Simplifies the application process for pensions.
- Ensures that only eligible individuals receive benefits.
- Allows users to track the status of their pension applications.
- Provides timely updates on application status and disbursements.
- Facilitates the submission and tracking of complaints and issues.

The app aims to empower the elderly, disabled, and other vulnerable groups by ensuring they receive the financial support they need.

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myCGHS

The myCGHS app, developed by NIC Himachal Pradesh and the NIC Health Team, is designed to enhance access to healthcare information and resources for CGHS beneficiaries. This user-friendly mobile application offers a wide range of services, significantly improving convenience and accessibility. Its key features include:

- Users can book, cancel, and view appointments for their preferred time, date, doctor, and Wellness Centre, ensuring flexible healthcare management.
- Provides access to electronic health records, allowing beneficiaries to download CGHS cards and index cards.
- Facilitates easy access to lab reports from CGHS labs.
- Enables users to check their medicine history.
- Allows users to check the status of medical reimbursement claims.
- Provides access to referral details.
- Users can search for nearby empaneled hospitals, labs, and dental units.

The app also incorporates robust security features, including two-factor authentication and mPIN functionality, ensuring the confidentiality and integrity of users' data.

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Meri Panchayat

The Meri Panchayat app is a unified mobile-based governance platform catering to 80 crore rural residents, officials, and stakeholders of Panchayati Raj. It facilitates transparency, accountability, and public participation in Panchayat activities.

This app integrates various portals such as e-Gram Swaraj, GPDP, MGNREGA, and others, offering citizens easy access to information about Gram Panchayat operations and initiatives. Users can access details about Gram Sabha meetings, development plans, budgets, ongoing works, welfare schemes, and more, empowering them with insights into local governance.

The app encourages public engagement by enabling residents to propose and review activities in the GPDP, report on-site issues, and track complaint resolutions. It enhances governance by promoting social auditing of development works and ensuring real-time monitoring of projects, thereby fostering greater community involvement and accountability.

Overall, the Meri Panchayat app serves as an effective and user-friendly tool for digital governance, empowering rural communities to actively participate in the development and management of their Panchayats while promoting transparency and efficiency.

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LG Listening Post

LG Listening Post is an innovative grievance redressal system developed specifically for the Office of the Lt. Governor of Delhi. It serves as a platform where individuals can submit their grievances through various channels including the portal and mobile app. This multi-channel approach ensures accessibility and ease of use for citizens seeking redressal for their concerns. With over 11.1 lakh grievances received and over 92.2 thousand grievances successfully addressed, the platform has already proven its utility in serving the needs of the people.

Key features include the ability to define different levels of redressal officers, automatic forwarding of grievances to the appropriate level for resolution, and defining escalation paths for unresolved issues. Additionally, the platform provides detailed insights such as departmental user listings, subject categorization, locality data, and pending grievance status by designated officers.

One of the most noteworthy aspects is its feedback-based approach to reopening grievances. This ensures that unresolved issues can be revisited based on user feedback, thereby enhancing the chances of satisfactory resolution.

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State-Level Training Program on ePrison Suite Conducted in Goa

In a significant move towards modernising the prison administration system, the Inspectorate of Prison Goa, in collaboration with the NIC, conducted a comprehensive state-level training program on the ePrison Suite. The program, held at the Goa State Central Library, aimed to equip prison staff with the necessary skills to efficiently manage and utilise the ePrison Suite, a cutting-edge software designed to computerise all prison-related activities.

The ePrison Suite is an integrated platform that aims to streamline prison management by providing real-time information about inmates, managing prison records, and facilitating online visit requests. By adopting this digital solution, the Inspectorate of Prison Goa seeks to enhance operational efficiency, ensure transparency, and improve overall security within the state's prison facilities.

The training program witnessed the participation of prison officials from correctional facilities across Goa. Over the course of the event, experts from NIC conducted detailed sessions on the functionalities and benefits of the ePrison Suite. Participants were introduced to various modules of the software, including inmate management, visitor management, and grievance redressal systems. Hands-on training sessions allowed the participants to familiarise themselves with the user interface and gain practical experience in using the software.

Inspector General of Prisons, Shri Omvir Singh, IPS, highlighted the importance of adopting digital solutions in prison management. "The ePrison Suite represents a significant leap forward in our efforts to modernise the prison system. By leveraging technology, we aim to improve administrative efficiency, ensure better security, and provide timely information to stakeholders. This training program is a crucial step in equipping our staff with the skills needed to effectively use this platform," he said.

The NIC team emphasised the software's ability to provide real-time up-



Dr. S P Gotekar, AIGP Prison, Goa, delivering address speech on the use of ePrison software

dates and detailed inmate information, which can significantly aid in the management and monitoring of prison activities. Additionally, the ePrison Suite's online visit request feature is expected to simplify the process for visitors, reducing the administrative burden on prison staff and improving the overall visitor experience.

Participants expressed their appreciation for the training program, noting the potential impact of the ePrison Suite on their daily operations. "This training has been very insightful. The ePrison Suite is a comprehensive tool that will greatly assist us in managing inmate records and visitor requests more efficiently," said one of the attendees.

– Archana Nagvekar, Goa

NIC UP State Centre, Lucknow Hosts Two-Day Workshop on JanParichay and Single Sign-On Service

NIC, in collaboration with the Computer Society of India (CSI), Lucknow Chapter, hosted a comprehensive two-day workshop on JanParichay (Meri Pehchaan) and Single Sign-On Service. The event, held at Malviya Sabhagaar, University of Lucknow, on March 14th and 15th, 2024, brought together IT professionals, academicians, and cybersecurity enthusiasts for an in-depth exploration of identity management and security services.

Coordinated by Shri Deepak Sharma, Sr. Technical Director, NIC UP State Centre, and CSI Chairman, Lucknow, the workshop aimed to enhance understanding of the functionalities and implications of JanParichay (Meri Pehchaan). The program featured active participation from NIC officers and included engaging sessions led by prominent experts.

Day One: JanParichay (Meri Pehchaan) Features and Insights

The inaugural ceremony was attended by dignitaries such as Shri Sunil Sharma (DDG & SIO, NIC UP), Dr. Arunabha Mukhopadhyay (IIM Lucknow), Dr. Divakar Singh Yadav (IET Lucknow), and Shri Anil Kumar Jha (NIC HQ). The sessions covered key features of JanParichay, data analytics insights by Shri Rohit Kumar (NIC HQ), value-added services, application onboarding, and troubleshooting techniques.

Day Two: Technology and Security

The second day focused on broader themes related to technology and security. Topics included DevOps and DevOpsSec, cybersecurity fundamentals by Shri Gaurav Kansal (NIC HQ), enhancing security strategies, Indian Public DNS, and cyber safety tips by Shri Rahul Mishra (UP Police).



The workshop served as a unique platform for knowledge exchange and networking, offering valuable insights into cutting-edge technologies and trends shaping the future of identity management and cybersecurity. Attendees left with a deeper understanding of how to leverage JanParichay and Single Sign-On Service to enhance security and efficiency in their respective domains.

The success of this workshop marks a significant milestone in promoting advanced identity management and cybersecurity practices in Uttar Pradesh, paving the way for a more secure and digitally empowered society.

– Parwaiz Islam, Uttar Pradesh

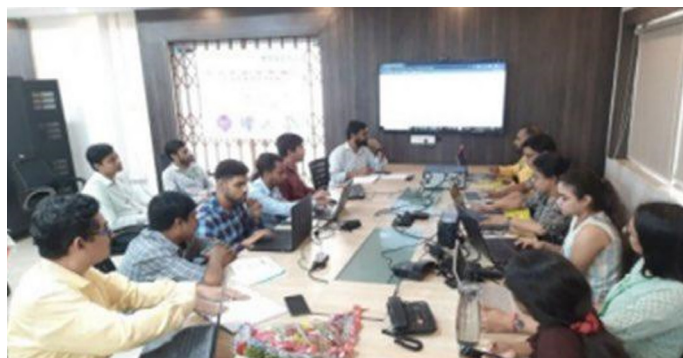
NIC West Bengal Conducts Five-Day Training on .Net Core API Development

NIC West Bengal State Centre has successfully concluded a comprehensive five-day training program on .Net Core API-based development in West Bengal. This initiative aimed to enhance the technical skills of participants in modern API development and architecture.

The training covered various critical aspects, including:

- **MVC Architecture:** Understanding the Model-View-Controller framework.
- **API Development Lifecycle:** Best practices for developing and managing APIs.
- **API Authentication & Authorization:** Ensuring secure access and data protection.
- **PostgreSQL:** Leveraging this powerful, open-source database system.
- **NAPIX:** Exploring the functionalities and applications of the NAPIX framework.
- **DevOps Concepts:** Integrating development and operations for streamlined workflows.

The program was designed to equip participants with the latest knowledge and practical skills in .Net Core API development, ensuring they can apply these in real-world scenarios effectively. The inclusion of DevOps concepts aimed to foster a holistic understanding of continuous integration and continuous deployment (CI/CD) practices, essential for modern software development.



5 day Training Programme for NIC Officers on .Net Core API development in West Bengal

Participants expressed their appreciation for the thorough and hands-on approach of the training, highlighting its relevance and applicability in today's tech-driven environment. This initiative by NIC underscores its commitment to fostering technological advancement and capacity building within the government and related sectors.

– Manas Kumar Bhattacharya, West Bengal

NIC Hosts Two-Day GST Prime Training for Southern State GST & CBIC Master Trainers



Two day hands-on training session on GST Prime to Southern State GST and CBIC Master Trainer by NIC officials at the National Academy of Customs, Indirect Taxes & Narcotics (NACIN) in Bengaluru

NIC successfully organized a two-day training session on GST Prime at the National Academy of Customs, Indirect Taxes & Narcotics (NACIN) in Bengaluru. The event was specifically designed for master trainers from the Southern State GST and Central Board of Indirect Taxes and Customs (CBIC).

The training featured hands-on sessions for CBIC officers from Bhubaneswar, Nagpur, Hyderabad, Bengaluru, Mumbai, Pune, and Visakhapatnam. It also included participants from the State GST Departments of Andhra Pradesh, Goa, Kerala, Telangana, Tamil Nadu, and Karnataka.

This intensive program aimed to enhance the proficiency of master trainers in GST Prime, a critical tool for managing Goods and Services Tax

processes efficiently. By equipping these trainers with advanced skills, NIC ensures a trickle-down effect, where knowledge is passed on to various departments and regions, thus standardizing and optimizing GST operations across the board.

Attendees commended the training's hands-on methodology, providing them with valuable exposure to real-life scenarios and practical applications. This program reflects NIC's steadfast commitment to fostering ongoing professional growth and ensuring operational excellence within India's tax administration landscape.

– Informatics News Desk, NIC-HQ

NIC Hosts Workshop on Digital Personal Data Protection Act



Esteemed speakers Shri Rakesh Maheshwari and Shri Deepak Goel share their insights on data protection during NIC's Digital Personal Data Protection Act Workshop on May 6th, 2024 at NIC Headquarters, New Delhi

The Training Division of the National Informatics Centre (NIC) organized a significant workshop on the "Digital Personal Data Protection (DPDP) Act" at NIC Headquarters, New Delhi. NIC officials from states and districts were connected via video conferencing and webcast, ensuring wide-spread participation.

The workshop, held on May 6th, 2024, was also conducted online through virtual conferencing. Esteemed speakers included Shri Rakesh Maheshwari, Former CG, Cyber Law, MeitY, and Shri Deepak Goel, Scientist-G, Cyber Law Division, MeitY, who provided valuable insights into the context of data protection, the legislative landscape in the country, and actionable points for data protection.

The Digital Personal Data Protection Act, 2023, marks a significant milestone in India's legal framework concerning data protection. It emphasizes

the processing of digital personal data while recognizing individuals' rights to protect their information and the lawful purposes for data processing.

One notable aspect of this Act is its gender-inclusive language, a departure from the traditional use of male pronouns. This marks a progressive step towards inclusivity and gender sensitivity in legislative language.

The workshop served as a platform for knowledge exchange and capacity building in the domain of data protection, reflecting NIC's commitment to promoting best practices and ensuring the secure handling of personal data in the digital age.

– Informatics News-Desk, NIC-HQ

NIC Hyderabad conducts eOffice Workshop for Modern Administration

NIC Hyderabad organized a focused eOffice workshop on April 19th. Attended by representatives from central government organizations, public sector entities, and autonomous bodies, the event aimed to provide insights into eOffice implementation strategies.

Distinguished guests including Smt. Rachna Srivastava, DDG & HoG eOffice Project Division, Shri Ajay Madhukar Joshi, DDG & SIO NIC Telangana State Centre, and Shri Kapil Kumar Sharma, Sr. Technical Director & HoD eOffice Project Division graced the occasion. Notable figures like Shri R Azhagesan, Member Secretary, Godavari River Management Board (GRMB), Shri Y Raja Karunanidhi, Sr. DGM, ECIL, Hyderabad, and Dr. Rohit Saluja, Asst. Prof. (Biochemistry) and Faculty in charge (IT Cell) from AIIMS Bibinagar, shared their valuable experiences.

The workshop, led by Raynil John, Senior Director (IT) & HoD, NIC Telangana, emphasized the necessity of eOffice implementation for streamlined decision-making and a paperless office environment.

Presentations on eOffice: Digital Workspace Solution and implementation modalities were followed by a live demonstration of the eOffice 7.x application. Attendees had the opportunity to learn from organizations that have already implemented eOffice, with a session by M/s Railtel elaborating on their implementation and support based on the MoU with NIC/NICSI.

With over 45 participants from prestigious organizations like IIT Hyderabad, ARCI, MANNU, AMD, NIMSME, and others, the workshop concluded suc-



cessfully, with support and guidance from SIO Telangana and coordination from NIC HQ and NIC Hyderabad. The event ended with the presentation of mementos to the esteemed speakers.

– Raynil John, Telangana



Vietnamese Delegation led by Major General Dương Văn Tính, Director General of Vietnam's Department of Information Technology, visits NIC headquarters on May 14, 2024, to foster collaborative cooperation on national eGovernance solutions

Vietnamese Delegation Visits NIC Headquarters for Collaborative Cooperation on National Level eGovernance Solutions

A high-profile Vietnamese delegation, led by Major General Dương Văn Tính, Director General of the Department of Information Technology in Vietnam, visited the NIC headquarters on May 14, 2024 in New Delhi to explore collaborative opportunities in the field of national-level eGovernance solutions. The delegation included Dr. Nguyen Thi Thanh Xuan and Mr. Vu Duc Ngoc, key figures in Vietnam's IT and eGovernance sectors.

The visit aimed to strengthen the ties between India and Vietnam by fostering knowledge exchange and cooperation in digital governance. The Vietnamese officials were particularly interested in learning about the advanced eGovernance solutions developed by NIC, which have been instrumental in delivering citizen-centric services at the grassroots level in India.

Shri Prashant Kumar Mittal, Deputy Director General of NIC, welcomed the delegation and, along with other senior officers, provided an insightful presentation on the range of digital platforms and eGovernance solutions developed by NIC. The presentation highlighted the significant achievements and innovations in India's digital governance landscape, emphasizing how these solutions have enhanced service delivery, transparency, and efficiency.

During the presentation, Shri Mittal showcased various national-level initiatives, including digital platforms that have transformed public service delivery, making it more accessible and efficient for citizens across India.

The discussion also focused on potential areas of collaboration where both countries could share expertise and develop joint initiatives to further enhance their respective eGovernance frameworks.

Major General Dương Văn Tính expressed his appreciation for the warm welcome and detailed presentation, noting the impressive advancements made by NIC in the field of eGovernance. He highlighted the importance of such collaborations in leveraging technology to improve governance and public service delivery in Vietnam.

The visit concluded with a mutual agreement to explore further opportunities for cooperation and to work towards a formal partnership in developing and implementing innovative eGovernance solutions. This collaboration is expected to pave the way for enhanced bilateral relations and shared technological growth between India and Vietnam.

The meeting underscored the critical role of international cooperation in advancing eGovernance and the mutual benefits of sharing technological advancements and best practices. Both parties are optimistic about the prospects of this collaboration and its potential to bring about significant improvements in public administration and citizen services in both countries.

– Informatics News-Desk, NIC-HQ

Next Gen PUC 2.0 to Enhance Pollution Certificate Issuance in Uttar Pradesh

In a bid to bolster the transparent and tamper-proof issuance of pollution certificates, NIC has introduced Next Gen PUC 2.0 in Uttar Pradesh. This web-enabled centralized application connects all Vehicle Pollution Checking Centres (VPCCs) across the state, revolutionizing the process of issuing Pollution Under Control Certificates (PUCs).

Next Gen PUC 2.0 facilitates the use of a mobile app by Automated Emission Testing Centres (AETCs), ensuring that all vehicles must be physically present before AETCs for the issuance of PUC certificates. This measure ensures the authenticity of the certificates and prevents fraudulent activities.

By centralizing the process and implementing stringent verification measures, NIC aims to enhance transparency and reliability in pollution certificate issuance. The introduction of Next Gen PUC 2.0 signifies a significant step towards modernizing the pollution control infrastructure in Uttar Pradesh, aligning with the state's commitment to environmental conservation and public health.

– Parwaiz Islam, Uttar Pradesh



Celebrating the 10th International Yoga Day at NIC: A Day of Unity and Wellness

On June 21, 2024, NIC celebrated the 10th International Day of Yoga in collaboration with the Ministry of Ayush. This milestone event was held at the NIC Headquarters in New Delhi and various NIC State Centres across the country, uniting employees and communities in a shared journey towards holistic wellness.

The day began early and bright at 7:30 am with a refreshing Yoga session at NIC HQ. A knowledgeable instructor from the Morarji Desai National Institute of Yoga, Ministry

of Ayush, led the session. Participants were guided through a series of Yoga postures, breathing exercises, and meditation techniques. The session highlighted the numerous benefits of Yoga, including improved physical flexibility, mental clarity, stress reduction, and spiritual growth.

NIC State Centres also embraced the spirit of International Yoga Day with great enthusiasm. Each centre organized its own Yoga sessions, featuring local instructors and tailored to the specific needs of their participants. These events focused on various aspects of Yoga, from

its therapeutic benefits for mental health to its spiritual dimensions and stress management capabilities. The sessions saw active participation from both NIC employees and local communities, fostering a sense of unity and shared purpose.

To further promote Yoga, NIC tweeted content to spread awareness about International Yoga Day. Efforts highlighted the Ministry of Ayush's Yoga app, Y-Break, through engaging social media posts, encouraging daily Yoga practice. This initiative generated significant user interest and contributed to the event's success.

